Middle and Late Bronze Age Settlement on the South Downs: the case study of Black Patch

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Summary

By integrating the corpus of existing knowledge with new information gained by applying geo-archaeological techniques as well as more traditional techniques to fresh archaeological investigations at Black Patch and elsewhere, the aims of the research are to look at the economy, social organization and ritual behaviour of life in the Middle and Late Bronze Age on the South Downs in the light of modern archaeological theory to consider the questions 'Why were these areas chosen for settlement?', 'What caused their abandonment?' and 'What can we learn about the life of the people associated with the settlements?'.

The combination of field walking, field survey and soil sampling has shown the presence of a Neolithic flint spread, woodland clearance and agriculture before and during the period of site settlement at Black Patch. The positioning of the Hut platforms and enclosures across existing lynchets, the modification of the existing field system, the establishment of a new one and the adoption of more intensive farming techniques (manuring, weeding and crop location and rotation) would imply a change of social order and the adoption of a sedentary lifestyle for some.

The existence of centrally placed hearths in huts found at Black Patch brings into doubt the existing day/night life/death metaphor currently commonly used for this period. Structured deposition points to a society concerned with agricultural fertility. The abandonment of Black Patch identified by Drewett and the dearth of later dated artefacts, at about the same time as the abandonment of the only other positively identified Deverel-Rimbury site in the immediate area, Itford Hill, suggests another change of social order, with livestock becoming more important as the Downland area around Black Patch appears then to be used only by nomadic herders.

Areas to the west of the River Ouse which had been settled earlier developed more complicated specialist production sites. These have yet to be found east of the River Ouse.

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Middle and Late Bronze Age Settlement on the South Downs: the case study of Black Patch, East Sussex.

BY

Richard Quinn Tapper

Volume 1

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List of Abbreviations.

B.A. Bronze Age.

BC Before Christ.

BL Blue Light.

BP Before Present.

C/SNS The Channel/southern North Sea.

D.R. Deverel-Rimbury.

dep. Depression.

E.B.A. Early Bronze Age.

E.I.A. Early Iron Age.

F.I.B.S. Functional Investigation of Botanical Species.

H. Hut.

HER Historic Environment Record.

H.P. Hut Platform.

L.B.A. Late Bronze Age.

M.B.A. Middle Bronze Age.

OIL Oblique Incident Light.

O.S. Ordinance Survey.

P.D.R. Post-Deverel-Rimbury.

ph. Posthole.

PPL Plane Polarised Light.

P.P.S. Proceeedings of the Prehistoric Society.

S.A.C. Sussex Archaeological Collections.

XPL Crossed Polarised Light.

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Chapter 1. Introduction

1.1 Introduction

From the middle to the end of the first millennium BC permanent settlement sites appear on the Sussex Downs for the first time. These abruptly disappear at the end of the period when settlement shifts to the coastal plain. Since Curwen (1954) no one has attempted to explain the reasons behind this shift of settlement pattern and what reasons led to the choice of situation for these permanent settlements and the reasons for their abandonment. The author's research shows continuous nomadic use of specific landscapes since the Neolithic. This is followed by a period of permanent settlement on some of these landscapes in the Middle Bronze Age. The Late Bronze Age shows a return to nomadic use when the grazing land on the Downs appears to be ceremonially annexed from the coastal plain and the river systems of Sussex by so-called cross ridge dykes. One region left virtually un-researched since the 1980s is the Sussex Downs. This is an area where many new excavations have taken place both on and close to the Downs offering much new information to a large corpus of existing knowledge.

There has been much new work on the subject of the Bronze Age in Britain since Barrett and Bradley (1980). This collection of essays of research from across the U.K. had a regional basis and sets the tone for later work where researchers looked for inter-regional comparisons. However these comparisons often only looked at individual aspects of Bronze Age culture (Bradley 1984, 40). Together with a lack of highly refined dates this has led to a static view of the period based on random snapshots across both time and location. Thus, research has been based on a series of cherry picked artefacts and excavations. These have been left unchallenged to form an overall view of the period.

It is now time to look at the subject again examining from the bottom up, the entirety of archaeological information available for each location. The increase in the number of known settlement sites in Figure 1.1 dated to 2006 and Figure 1.3 dated to 1982 can clearly be seen. By examining in detail one case study, in this instance Black Patch, East Sussex and its surroundings, it is hoped to show how the development of the area through time can be examined and how possible lifestyles can be determined by a consideration of what is achievable, given resource restraints.

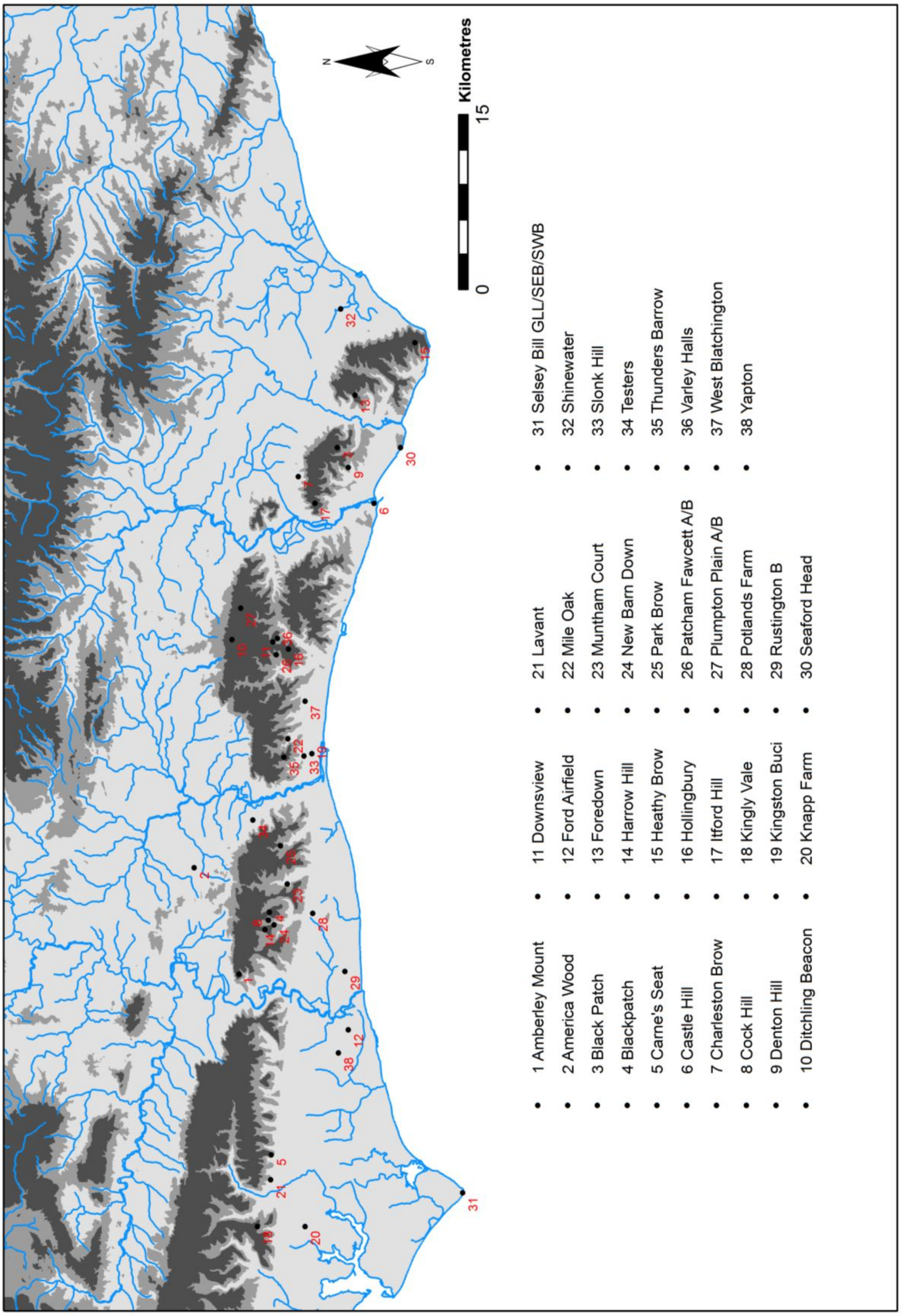


Fig. 1.1 Middle and Later Bronze Age Sites In Sussex. See Vol 2. Appendix. Source county HERs. Map D. Lea, Contains Ordnance Survey data © Crown copyright and database right 2010

1.2 Research Questions

Of particular interest are the reasons and influences both internal and external for settlement and abandonment of Downland sites. The following framework was set:-

1) Why were these areas chosen for settlement?

2) What caused their abandonment?

3) What can we learn about the life of the people associated with the settlements?

One of the major problems of a regional approach is that it tends to emphasize regional differences rather than similarities. This research required an in depth case study, an excavation incorporating recent techniques. The Later Bronze Age site at Black Patch was chosen.

The evidence from this investigation was then used to compare Black Patch with other Sussex sites (Figure 1.1) and has enabled the questioning of the existing model of continuous settlement from the Middle Bronze Age to the present day and to consider surrounding areas such as Wessex, the Thames Valley and Estuary and the near Continent (Figure 1.2 **).**

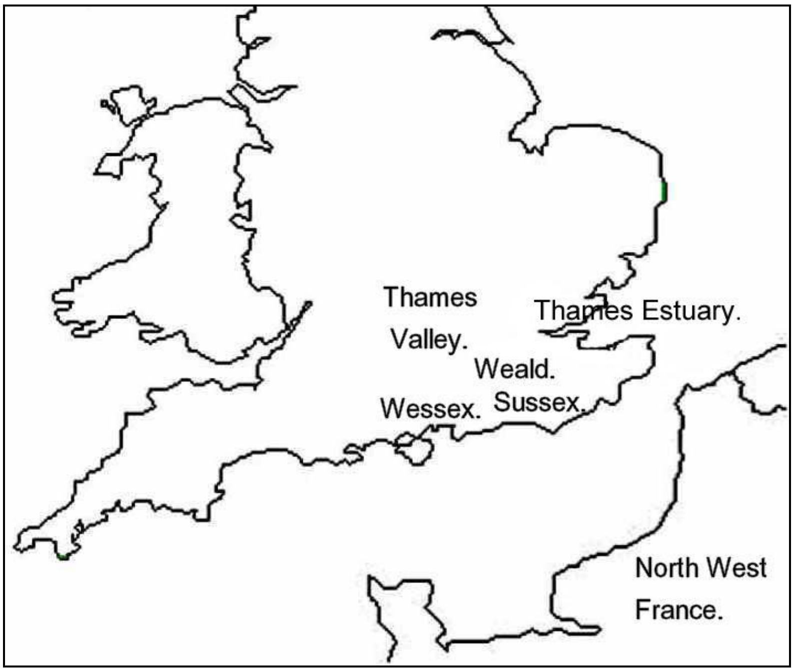


Fig. 1.2 Bronze Age areas considered in text. Scale 1:1,000,000

The period under study has been referred to either as one period, the Later Bronze Age, or two, the Middle Bronze Age and Late Bronze Age. Throughout this work, I will use Mike Seager Thomas's definitions based on pottery traditions in Sussex (Table 1.1) with the Middle Bronze Age dating from c.1700 to c.1150 cal BC and the Late Bronze Age from c.1150 to c. 650 cal BC. 'Later Bronze Age' will be used if referring to work where that terminology has been used and, unless stated, will refer to the entire period. Radiocarbon dates for sites referred to into the text are given in Tables 1.2 and 1.3.

Table 1.1 Sussex Bronze and Early Iron Age pottery traditions and their dating. After Seager Thomas 2008

<table>
<tr><th colspan="2">Pottery tradition</th><th>Old 'Three Age System' dates</th><th colspan="2">Old names</th><th colspan="2">'Three Age system' dates – current</th><th>Calendar date (cal BC)</th></tr>
<tr><td colspan="2">Beaker</td><td>N/A</td><td colspan="2">N/A</td><td colspan="2">Metal using Neolithic, E.B.A.</td><td>c. 2600–1800</td></tr>
<tr><td colspan="2">Food Vessels</td><td>N/A</td><td colspan="2">N/A</td><td colspan="2">E.B.A.</td><td>c. 2000–1700</td></tr>
<tr><td rowspan="3">Collared Urn</td><td>Early</td><td rowspan="3">M.B.A.</td><td rowspan="3">Overhanging rim</td><td rowspan="2">Primary series</td><td colspan="2" rowspan="3">E.B.A.</td><td rowspan="2">c. 2000–1700</td></tr>
<tr><td>Middle</td></tr>
<tr><td>Late</td><td>Secondary series</td><td rowspan="2">c. 2000–1500</td></tr>
<tr><td colspan="2">Biconical Urn</td><td>M.B.A.</td><td colspan="2">N/A</td><td colspan="2">E.B.A.</td></tr>
<tr><td colspan="2">Deverel-Rimbury</td><td>L.B.A, L.B.A I</td><td colspan="2">N/A</td><td>M.B.A.</td><td rowspan="3">Later Bronze Age</td><td>c. 1700-1150</td></tr>
<tr><td rowspan="3">Post-Deverel-Rimbury</td><td>Plain wares</td><td>L.B.A II</td><td colspan="2" rowspan="2">Hallstatt, Iron Age A1, Ultimate Deverel-Rimbury</td><td rowspan="2">L.B.A</td><td>c. 1150–950</td></tr>
<tr><td>Developed plain wares</td><td rowspan="2">EIA, Early pre-Roman Iron Age (EPRIA)</td><td>c. 950–800</td></tr>
<tr><td>Decorated wares</td><td colspan="2">Iron Age A2, Caburn 1, Kimmeridge-Caburn</td><td>L.B.A–EIA</td><td>EPRIA</td><td>c. 800–500</td></tr>
</table>

Table 1.2 Radiocarbon dates for Middle Bronze Age sites in Sussex. After Hamilton 2003 Appendix 6.2, 83

Period/Site	**Lab Number**	**Radiocarbon result BP**	**Calibrate date range (2 sigma)**
Middle Bronze Age			
Black Patch.			
Grain from hut platform 4, pit 5	HAR-2939	2780+/- 80	1206-800 cal BC
Grain from hut platform 4, pit 3	HAR-2940	3020+/- 70	1430-1020 cal BC
Grain from hut platform 4, pit 4	HAR-2941	2790+/- 70	1187-805 cal BC
Grain from hut platform 1, pit	HAR-3735	2970+/- 80	1140-935 cal BC
As above	HAR-3736	3080+/- 70	1504-1128 cal BC
As above	HAR-3737	2850+/- 70	1258-832 cal BC
Itford Hill.			
Burnt barley on floor of storage pit, hut E	GrN-6167	2959+/- 35	1292-1018 cal BC
Downsview.			
Charcoal from fire-pit 2146 on hut terrace 2046	UB-3783	3201+/- 28	1521-1422 cal BC
As above	UB-3684	3175+/- 25	1517-1406 cal BC
As above	UB-3785	3199+/- 27	1521-1411 cal BC
As above	UB-3786	3220+/- 27	1524-1428 cal BC
Charcoal from posthole 2391 on hut terrace 2262	GU-5429	3140+/- 80	1600-1134 cal BC
Charcoal from posthole 2802 on hut terrace 2262	GU-5430	3170+/- 70	1603-1263 cal BC
Charcoal from posthole 4073 on hut terrace 4029	GU-5432	2980+/- 70	1408-999 cal BC
As above	GU-5433	3020+/- 60	1413-1049 cal BC
Charcoal from fire-pit 4029	OxA-4809	3270+/- 40	1680-1439 cal BC
Charcoal from posthole 2406 on hut terrace 2262	OxA-4811	3110+/- 60	1517-1135 cal BC
Varley Halls.			
Cattle ulna, palisade ditch	BM-2917	3050+/- 50	1428-1129 cal BC
Human humeris and cranium	BM-2919	2890+/- 60	1287-903 cal BC
Charcoal associated with daub, hut 3	BM-2936	3130+/- 50	1517-1263 cal BC
Mile Oak.			
Ungulate tibia, primary silt, ditch 243	OxA-5106	3250 +/- 50	1684-1408 cal BC
Cattle radius, from posthole 1579, hut 1			
Cattle tooth, base of pond 1504	OxA-5107	3260 +/- 65	1688-1408 cal BC
Cattle mandible, posthole 1522			
Deer femur, primary silt ditch 1557	OxA-5108	2975 +/- 50	1382-1015 cal BC
Deer bone, posthole 386	OxA-5109	2975 +/- 50	1382-1015 cal BC
Animal Bone, posthole 4108 hut B	OxA-3153	3480 +/- 80	2024-1605 cal BC
	OxA-3154	3050 +/- 80	1495-1046 cal BC
	OxA- 3155	2950 +/-100	1427-898 cal BC
Thundersbarrow Hill Pre-hillfort enclosure ditch	HAR-8182	3220 +/- 70	1682-1320 cal BC

Table 1.3 Radiocarbon dates for Late Bronze Age sites in Sussex. After Hamilton 2003, Appendix 6.2, 83-4

Period/Site	Lab Number	Radiocarbon result BP	Calibrate date range (2 sigma)
Late Bronze Age			
Bishopstone Thermoluminesent date on two pottery sherds	Source:Bell 1977,290	Average TL date: 950 +/- 70	Probable limits: 1550-350 cal BC
Climping Mixed charcoal, upper fill (context 81) of large pit	BETA-152860	2610 +/- 70	900-540 cal BC
Ford Carcoal?, context 1085, deposit, above context 1113,(see below)	BETA- 144445	2820 +/- 60	1206-830 cal BC
Charcoal? Context 1113, pit fill	BETA- 144446	2800 +/- 60	1186-826 cal BC
Charcoal Context 1284 pit fill	BETA- 144447	2580 +/- 40	817-560 cal BC
Ditchling Beacon bone, base of rampart ditch	HAR-5935	2560 +/- 100	902-401 cal BC
Mile Oak Cattle Bone from make up mound K	OxA-511	2820 +/- 50	1186-833 cal BC
Potlands Farm, Patching Twigs from large waterlogged pit	Q-3259	2690 +/- 30	901=801 cal BC
Selsey West Beach Alder charcoal, context 40, base of upper context of well	AA-40932(GU-9225)	2695 +/- 45	966-798 cal BC
Immature oak, context 53 base of well fill	AA-40933(GU-9225)	2520 +/- 40	798-414 cal BC
Shinewater Young structural timber	BM-2990	2630 +/- 70	915-547 cal BC
As above	BM 3002	2690 +/- 35	904-800 cal BC
Wooden handle (maple) of socketed sickle	OxA-6176	2655 +/- 50	902-787 cal BC
Varley Halls Cattle humerus, burial	BM- 2917	2790 +/- 50	1048-827 cal BC
Wolstonbury Lower ditch fills of main enclosure	BETA-949592	2730 +/- 70	1048-791 cal BC
Yapton Charcoal, pit 2, middle layers	HAR-7038	2600 +/- 70	897-522 cal BC

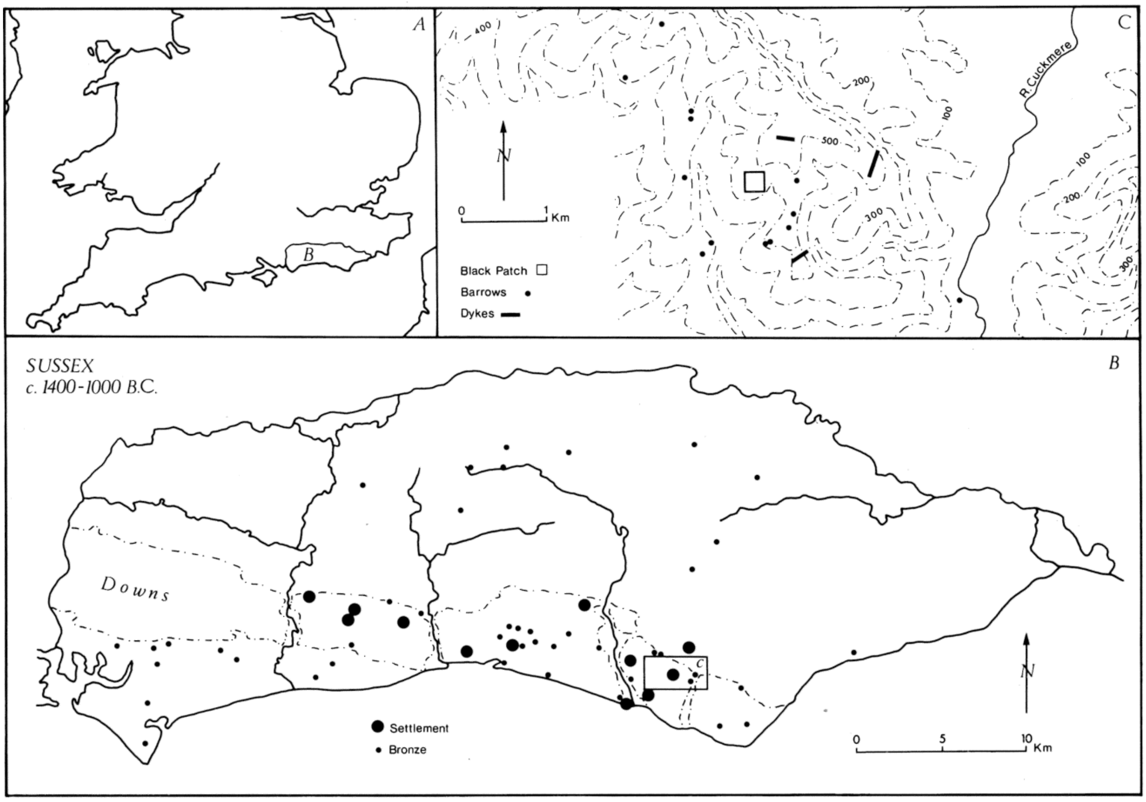


Fig. 1.3 Map showing A. Sussex in a regional basis, B. Settlement sites and the location of bronze finds. C. Black Patch settlement site also showing local barrows and cross ridge dykes. (Drewett 1982, fig 1, 322)

1.3 Black Patch

The decision to excavate at Black Patch (Figure 1.3) was made for several reasons.

1) It is in a typical position being placed on a Downland ridge as are many other Downland Bronze Age sites (Vol.2, Appendix, Gazetteer of Middle and Late Bronze Age sites in Sussex).

2) There is on-going plough damage that at present seems will continue for the foreseeable future.

3) There is a large settlement area with associated field system.

4) Part of the site has already been excavated to modern standards (Drewett 1982). Drewett's interpretations of and models derived from the site have been used extensively in Later Bronze Age studies of Southern England.

5) Given the relative remoteness of the site and its present agricultural usage there is the opportunity to extend the excavations to a wide area.

Chapter 2. Theoretical and Historical Approaches to the Research

2.1 Introduction

This chapter discusses the aspects of archaeological research approaches used in this study and their relevance to research aims. This is followed by an appraisal of previous research in Sussex.

2.2 Holistic Archaeology

Holism or wholism is a philosophical word defined by the *‘The Concise English Dictionary’* as ‘the theory that certain wholes are to be regarded as greater than the sum of their parts’ (Thompson 1995, 647). This is generally accepted in archaeology to be the addition of scientific or documentary methods to those traditionally used and where each aspect of life is given equal importance (Flannery 1976; 1983; Flannery and Marcus 1983). Both processual and post-processual methods have also been used in this study as it is believed that this approach is necessary to understand the diverse and complex developments in the Bronze Age.

The argument for this is a simple one. A dichotomy has developed in archaeology in the way space is considered. It has either been looked at from a functional, practical view (Drewett 1982) or as a stage from whose scenery human actions and purposes can be read (Brück 1995). Whilst not all human activities are purely functional, as is evidenced by the many strange depositions on and off prehistoric sites, e.g. Itford Hill’s chalk phallus (Burstow and Hollyman 1957) and the many hoards of metal (Bradley 1990), self preservation requires the input of a certain amount of labour and planning. The merging of processual and post-processual methodologies backed up by scientific research should show the best answers to the research questions.

It is agued that most archaeology incorporates a degree of holistic input. A site report usually contains input on artefacts (pottery, stone, metal etc), ecofacts (seeds, pollen, snails etc), sediments and soils (particle analysis, micromorphology etc), all of which have scientific techniques at their core. Documentary analysis in the form of desk based assessments is also used. An excellent example of this is Richard’s (2005) work on Orcadian monuments and dwellings where his interpretive analysis contains many practical insights taken from specialists reports.

The major problems in Bronze Age archaeology are firstly lack of data and secondly the totality of the existing data. In other words, we don’t know what we don’t know. How much of the record has yet to be discovered? How much is irretrievably destroyed?

Whilst traditional non holistic methods have provided us with invaluable practical information about Bronze Age material goods (Hamilton 1993; 2002; Seager Thomas 1999; Butler 2001) and spatial relationships (Drewett 1982), to go further requires the in depth study of individual sites and their surroundings using as many aspects of research as practically possible and to integrate the findings. (This body of information can be used as both site specific and to fill in gaps at other sites). Otherwise there is a temptation to cherry pick specific information across sites to back up theory. This is evident in Brück’s work on Bronze Age deposition in which she interprets the deliberate killing (ending its life) of a hut on the basis of what appears to be a spear hole in the hut’s surface as part of her theories on the compatibility of human and hut lifecycles. This is the only example across a large number of huts where this might have happened that is still visible in the archaeological record (Brück 2001, 151).

This is one problem with non-holistic archaeology now that there is a large but incomplete data base. Ideas are capable of being formed but not fully tested. There is a further problem in that ideas can be formed which, when a wider data field is viewed are impossible. On the other hand, ideas that conform to wider data become more viable. Examples of this in the present research are Drewett’s assumption that the soils surrounding the settlement sites at Black Patch were thin and degraded, micromorphology has shown them to be loess, very similar to the high quality arable land on the coastal plain (Drewett 1982, 395). His assumption that small shallow depressions on Later Bronze Age sites were ponds (Drewett 1982, 325) is backed up by chemical analysis and micromorphology.

This method has enabled the approaching of problems with a large amount of data to substantiate and/or show discrepancies in current thinking.

Amongst reservations of using a holistic approach is that individual conclusions are open to alternative interpretation. By attempting to extrapolate conclusions from the totality of known information an overall picture is presented which can stand as a reference point for future work. This picture will answer the research questions in a coherent manner that can be challenged and developed but one that is internally consistent.

2.3 Phenomenology

Phenomenology is 'the understanding and description of things as they are experienced by a subject' (Tilley 1994, 12). The subject becomes the interpreter. In prehistoric archaeology this is the modern day archaeologist. Phenomenology studies the structure of various types of experience ranging from perception, thought, memory, imagination, emotion, desire and volition to bodily awareness, embodied action and social activity, including linguistic activity (Husserl 1900-01, 1913). The term 'phenomenology' is often restricted to the characterization of sensory qualities of seeing, hearing, etc.: what it is like to have sensations of various kinds (Smith 2007). It is an attempt by post-processualist archaeologists to populate and bring agency into landscape studies. This has caused much debate as to whether this is actually possible. Interpretations will be bound to the investigator, with a different culture and background (academic) from the original inhabitants of the landscape. Other problems include interpreting landscapes through time from the original natural untouched landscape to the modern day, given all the changes that may have taken place, the use of senses other than sight and the use of concepts like inter- visibility which may or may not have had have a relevance in the past (Brück 2005; Fleming 2006; Barrett and Ore 2009).

The above problems are compounded by the question, what can actually be interpreted? Sensations, ideas, feelings, empathy or emotions? The first two are regularly interpreted in phenomenological studies by modern western thought processes. Tarlow (2000) finds great difficulty defining words like 'emotion' and 'empathy'. Emotion however 'is a centrally important area of human understanding, meaning and experience. As archaeologists we need to become critically aware of how we represent emotion in the past, to recognize the significance of emotion in writing three-dimensional and humanized pasts and to open our minds and imaginations to the challenge of emotional archaeologies' (Tarlow 2000, 730). The response to her paper was similar to that of phenomenology in archaeology generally - an exciting prospect but more investigation was needed (Cowgill 2003; Hodder 2003; Kus 2003; Meskell 2003; Mithen 2003; and Thomas 2003). By restricting archaeological research to the characterization of sensory qualities of seeing, hearing etc. is contra to the original concept of phenomenology 'as the experiences of self' (Husserl 1900-01) and denies the opportunity of attempting to create potentially valuable and refreshing interpretations. In this study phenomenological investigations have been expanded to include other areas of experience by looking at collective response to the awareness of location.

A study of embryonic phenomenological work shows why this was often the subject of debate. Early attempts at phenomenological writing were usually narratives of an individual walking through the landscape and debating their personal experiences (Tilley 1994; 1996; 2002; 2005; Edmonds 1993; Thomas 1993; Bender *et al.* 2007), highlighting the problem of singular/ gender biased view points. They were mostly directed at Neolithic and Early Bronze Age monuments.

Inter-visibility is also much used in phenomenological studies (Bender 1998; Hamilton and Manley 2001; Cummings 2003). Unfortunately we do not know whether inter-visibility was an important part of monumental planning or whether subsequent land changes have obscured or opened up vistas.

Progress has been made in other areas. The lack of sound has been addressed in various experiments involving the creation of different noises made in contained and open spaces (Watson and Keating 1999; Watson 2001; Hamilton *et al.* 2006), touch has been addressed in darkened tombs and caves. However this only addresses the problem in a small number of type sites.

One of the major problems is lack of methodology. This has begun to be addressed by Hamilton and Manley (1997); Drewett and Hamilton (1999); and Hamilton *et al.* (2006). Hamilton and Manley (1997) visited all the known hill-forts in the South-East of England noting their topography, morphology and chronology. They measured the direction and fields of view from the monuments plus entrance orientations. Amongst other findings they were able to group hill-forts into three temporal groups. Only those belonging to the first group Later Bronze Age/Early Iron Age were intervisible with others of a similar period. This suggested that ‘the hill-fort users had connections with the landscapes which the sites visually accessed’ (Hamilton and Manley 1997, 25).

Hamilton’s next collaboration was with Drewett (1999), on a single as opposed to a group of sites at Mount Caburn, East Sussex. This site had been part of the earlier work on hill-forts.

In a sub-section called ‘Using The Surface: Inter and Intra-Site Visibility’ Hamilton asks whether everyday settlement activities within the enclosed space have been largely viable. She restricts her study to visual communication using upper body movement. She finds that the ‘site would not have functioned well at an inter-personnel level, because of difficulties observing persons over distances of greater than 40 metres' (Hamilton 1999, 13).

Finally, Hamilton *et al.* (2006) who believe in the usefulness of phenomenology 'for characterizing, investigating and prompting place-specific research question about previously unexplored sites' use phenomenology to study a number of Neolithic settlement sites in the Taviolere-Gargano Prehistory Project (Hamilton *et al.* 2006, 31-33).

By setting a point at the centre of a site, a series of different experiments were conducted. Major landscape features and obscured areas were plotted on four concentric circles representing near, middle, far and distant horizons. This produced what was described as 'an *in situ* and thinking engagement and familiarization with the landscape'. From these diagrams visual dominance of different natural features could be viewed. It is an extension of inter-visibility studies but it also shows areas close to a site and has bearings on site organization, security and safety. This latter is particularly relevant where young children are concerned.

Other experiments recorded the distances from the central point that different movements, sounds and smells, human and animal could be experienced such as people waving or making smaller hand gestures, shouting, whistling or speaking, dogs barking and the smell of cooking. From these measurements and visibility zones, the practicality of a site could be examined. Defensibility, safety of children and animals and inter-site communications could also be studied. Intra-site communications, such as the distance and direction smoke may be observed, were also studied. Again, by adopting a central point on the site and walking for one hour in all four cardinal directions, they produced a phenomenological site catchment analysis by noting topography, soil, landscape, vegetation features and visibility to the left, centre and right (Hamilton *et al.* 2006, 54-65).

This work is seminal as it shows how phenomenology can be used to study the practical aspects of life as well as the ritual. Being fully recorded, it is repeatable. Their use of male and female volunteers in their work goes someway to alleviate gender biased criticism of phenomenology. The number of sites studied and the necessarily relatively short amount of time spent at each is a limitation of their work. When looking at a single site it was possible to adapt and add to their work for a phenomenological study of Black Patch and its surroundings. This is in order to add a further interpretive angle to the study.

2.4 Ethnography and Ethnoarchaeology

Ethnoarchaeology is defined by Susan Kent as the formulation and testing of 'archaeologically orientated and/or derived methods, hypotheses, models and theories with ethnographic data. Ideally one starts with archaeological research interests, goes to ethnographic data for formulation and/or testing of, hypotheses, models and/or theories about these interests and then returns to the archaeological record to implement the understanding gained from the ethnographic data' (Kent 1987). It is a major tool for processual archaeologists.

Recent works have used ethnographic research to look at the evolution of human societies (Earle 1991; 1997; Johnson and Earle 2000). Using ideas from these books the development of several Bronze Age societies have been postulated (Kristiansen 1998; Earle 2002; Kristiansen and Larsson 2005). This will be attempted by the current study. Ethnographic studies will be looked at elsewhere particularly with respect to burnt stone technologies and agricultural husbandry techniques.

2.5 Historical Archaeological Approaches in Sussex

2.5.1 Culture Historical

E.C. Curwen was actively involved in a large number of prehistoric settlement excavations in Sussex from the late 1920's to the1930's (Curwen 1929, 1930, 1932a, 1934: Curwen and Curwen 1927: Curwen Curwen and Hawkes 1931: Curwen and Williamson 1931: Parsons and Curwen 1933: Hardy and Curwen 1937: Holleyman and Curwen 1935). He was also very interested in farming techniques, writing articles on various aspects of prehistoric agriculture, ploughing techniques and technology, quern stones and diets (Curwen 1927 and 1932b).

Using this knowledge he produced a synthesis of settlement sites and their surrounding field systems and artefacts, enabling him to make the following description of Late Bronze Age life as 'essentially a system of upland tillage, centred on large or small farms which were situated on hills and which were served by roads which ran for the most part along the ridges.' (Curwen, E.C. 1954, 165). Thus we have the earliest answers to the research questions-

Q. Why were these areas chosen for settlement? - A. Invasion

Q. What caused their abandonment? A. Technological advancement

Q. What can we learn about the life of the people associated with the settlements? A. Stable Upland Tillage etc.

One of the major tools in this current research is the creation of an up to date gazetteer of Later Bronze Age sites in Sussex.

2.5.2 Spatial Archaeology

The arrival of post-processual archaeology has not dampened the enthusiasm for explanations of site and monument placement. Post-processual archaeologists have studied settlements and landscapes in terms of spatial arrangement. Their approaches have been to look at the problem from the two opposite ends of the spectrum. The first approach is to claim that by understanding how people react to their surroundings, we will be able to understand something of the social order behind the architectural and spatial design of settlements and monuments (Hill 1995; Parker Pearson 1996). The second is to claim that by understanding how people live in and react to a space once created, we will gain a better understanding of their lifestyle (Tilley 1994; Barrett 1994). We will look at three examples of spatial archaeology from Sussex. Typical of the first post-processual approach are the following spatial studies of late prehistoric funerary monuments in Sussex. Firstly, there is David Field's (1998) work on round barrows. Whilst accepting that the clustering of barrows on boundary zones (soil type, geology and topography) can be understood in a territorial or socio-economic manner, it can also be considered in a cosmological way as providing harmony to wider landscape. He considers this ceremonially constructed vision of harmony, akin to the Chinese concept of *feng shui,* in the landscape of much greater import than the concept of intervisibility of specific monuments and sites (Field 1998, 322-324).

Secondly, a contra view is presented in a series of works by Russell (1996; 1997; 2001; 2002) who argues that all forms of monumental architecture in the Neolithic, Early and Middle Bronze Ages were built with the intention of imprinting the landscape with the cultural and social identities of the groups responsible and the associated artefacts have been deposited as a 'cultural library'. He therefore calls into doubt all previous models on the basis that they are attempts to impose a modern framework onto the prehistoric landscape and its inhabitants (Russell 2001, 116).

Russell's earlier work is severely criticized by Garwood, in that interpretations based on an open model of monument typologies can be highly selective and used to back existing theories, in the case of Russell the proposal that some sites be reclassified as ‘henges’ (Garwood 2003, 56-57).

Lastly, Garwood’s (2003) own detailed work on round barrows and funerary traditions has accommodated, appraised and borrowed from previous work in a manner fulfilling Tilley’s (1994) idea of ‘a history of interpretations’. He is concerned with the patterns of preservation and destruction, the way they have been investigated, their numbers and distribution, their type, construction and chronology, their assemblages and, where appropriate, groupings. From his evidence, Garwood is able to suggest a tri-partite chronology of grave assemblages and artefact types.

The first period, 2500-2100 BC, has a concentration of early Beaker inhumations on the fringes of the Central Downs around Brighton. The second period, 2150-1750 BC, has a distribution of later Beaker, Food Vessel, Biconical Urn and Early Bronze Age complex burials again centred on Central Sussex. The last period, 1800-1200 BC, has a much wider distribution, including two definite cemeteries. Whilst acknowledging that mapping can discern patterns, Garwood contends that to determine the meaning of these patterns requires an understanding of how these monuments were meant to be appreciated, both visually and symbolically, in their landscape setting (Garwood 2003, 58). By looking at chronologically different distributions, he is able to compare spatial patterns through time. The distributions of Early Neolithic enclosures and long mounds centred on the Trundle and Whitehawk (Drewett *et al.* 1988) are very similar to later concentrations of rich graves and large round barrows, thus showing the long term significance of this area and landscape from early Neolithic through to Middle Bronze Age (Garwood 2003, 60).

The present approach to the study of the settlement and surrounding landscape borrows much from Garwood’s hybrid version, for once a landscape has been modified by humans those modifications need to become part of the analysis of any ongoing developments in the landscape.

Chapter 3. Current Research on the British Bronze Age

3.1 Introduction

This chapter deals with the current state of research in southern Britain and the research models for Sussex.

3.2 Current Research

The material that defines the age as Bronze is an alloy of copper and tin. These two metals are very rarely found together and are random in their distribution in Britain and on the Continent. The haphazardness of these distributions requires the need for long distance moving of materials and therefore people for the production of both pure copper, the immediate forerunner of bronze in the Chalcolithic and the alloy bronze.

An early example of this long distance travel is the Amesbury Archer discovered buried under a small mound together with a set of artefacts which are similar to burials found widely spread in Central Western Europe and the Mediterranean and known as Bell Beaker burials. These artefacts were of high status including weapons and metal working tools. Oxygen and strontium isotope analysis of the Amesbury Archer's tooth enamel indicates that his place of origin was the alpine area of Central Western Europe. This is an area where metallurgy had been long established. His body has been dated to between about 2500 and 2300 BC and is probably the earliest Bell Beaker grave in Britain. He is believed to have been a prospector looking for rare mineral resources as well as a smith (Fitzpatrick 2009).

Brodie has suggested reciprocal movement of wives in the opposite direction. This is based on the spread of certain Bell Beaker pottery styles and isotopic evidence from burials in Bavaria (Brodie 1997). The evidence for the movement of people and ideas at the start of the Bronze Age is supported by the wide spread of the Beaker Culture across Europe. This is both a Late Neolithic (Chalcolithic) and Early Bronze Age phenomenon. The movements behind the spread of the Beaker Culture would appear to be partly commercial (Figure 3.2). Needham's idea of a Channel Bronze Age (Channel /Southern North Sea Maritory) (Figure 3.1) is one in which long distance trade and links are for 'specialized gear of the elite and ritual specialists' (Needham 2009, 14).

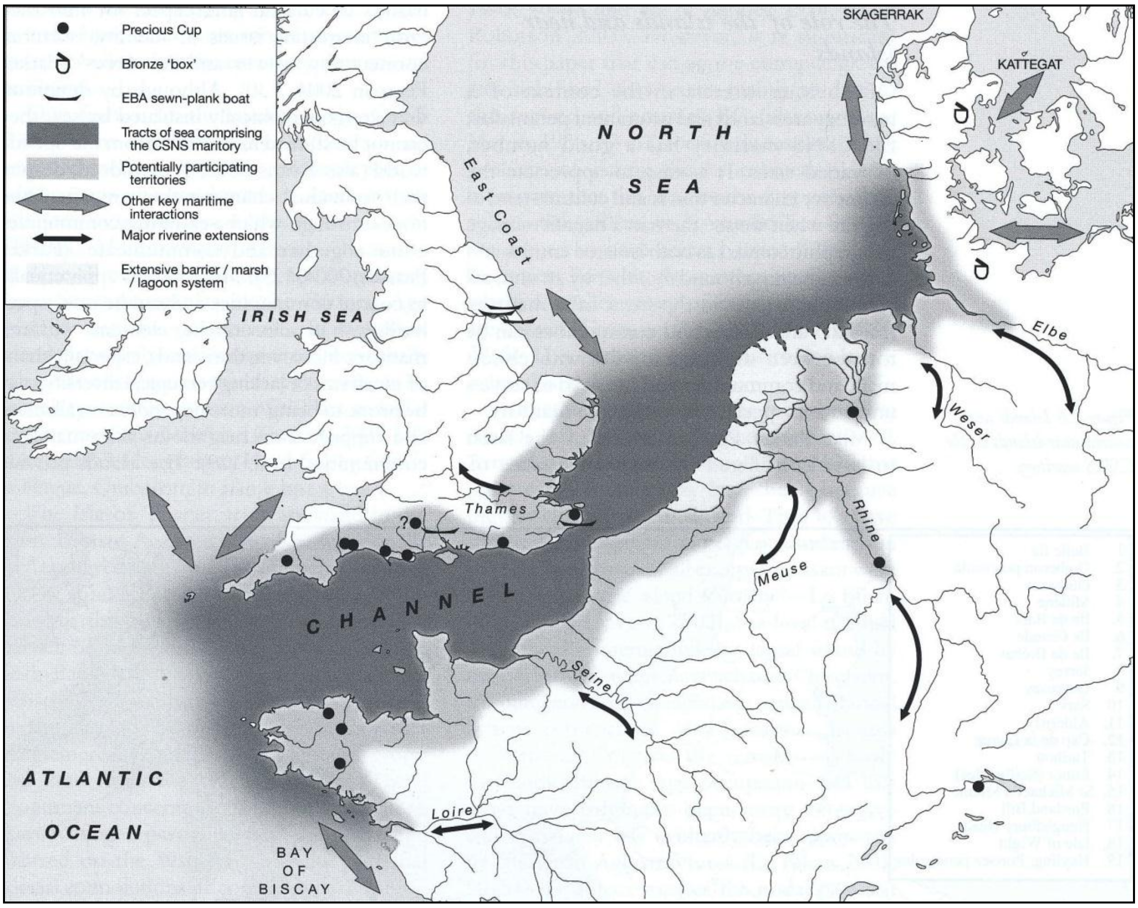


Fig. 3.1 The C/SNS maritory of the Early Bronze Age the larger in flowing rivers are also shown. Shown in addition to precious cups are potentially related bronze lidded boxes from Jutland and Early Bronze Age boat finds. After Needham 2009, 21, fig. 2.5

Needham (2009, 18) defines a maritory as 'a definable zone of privileged or relatively high-flux interaction used for the execution of certain specialist maritime exchanges. Those exchanges may be few or many in kind, highly focused or diverse, the possible range includes non-local raw materials, exotic artefacts and esoteric knowledge but also people for example, marriage partners, adoptees, ambassadors, interns or craftsmen' (Needham 2009, 18). Here the idea is akin to membership of a club, rather than a territory or culture zone. Membership is demonstrated by cultural and social norms such as the ability to create conforming exotic artefact types such as exotic cups (Needham pers. comm.). The following Figure 3.2 shows the geographical location of the C/SNS maritory and a chronology of cross channel interactions from 2500-1500 BC.

BC	PERIOD		Critical aspects of cultural material	Use of the surrounding seaways
2500	1	COPPER AGE	Beaker arrivals in NW Europe	Sea-passage and Channel crossings for progressive extension of settlement
			First Beaker graves in Britain	
			Maintenance of early Beaker network	**Good cross-sea connections** all round for metal and other Beaker identity markers
			Progressive dominance of copper from SW Ireland	Increasing importance of Irish Sea crossings for acquisition of metals
2250			Necked Beakers put into funerary use Adoption in Britain of new lithic types: battle-axe & flint dagger	Connections to Lower Rhine maintained, but southward links to Atlantic Europe wane
	2 a		Switch to tin-bronze metallurgy in Britain (& Ireland)	
	2 b	EARLY BRONZE AGE	Insular funerary rites and metalwork (Brithdir/Migdale/Killaha) Limited bronze and gold exports	**Period of relative cultural insularity** in Britain and Ireland
2000	2 c		Adoption of Barbed Wire Beaker style Adoption of inurned cremation rite Growing importance of Welsh copper Armorican dagger style adopted in Britain; occasional *vases a anses* Renewed demand for amber in south **Precious cups** developed	Increasing links with Lower Rhine, Picardy and Armorica Western seaways continue to be important Growing regularity in sea crossings Emergence of ***CSNS maritory*** with appropriate codes of conduct
	3		Exchange outwards of decorated axes and inwards of cosmological emblems and new types (e.g. halberd pendants, pins)	Rivers Rhine and Elbe and southern Scandinavian seaways extend reach eastwards beyond maritory
			Faience technology brought in	
1750	4		Arreton metalwork more closely allied to Continental; first bronze spearheads; more metal imported from Continent	Increased linkage to N France, Rhinelands, Saxo-Thuringia & S Scandinavia
			Greater cross-Channel conformity in domestic assemblage, settlement & landuse (Trevisker / Biconical Urn / Eramecourt / Hilversum)	CSNS maritory promotes a core area of more unified culture Beginning of the ***Channel Bronze Age***
			Primitive shield-pattern palstaves scattered widely across N Europe	Long-range specialist metalwork link W Britain/ Armorica to Poland
1500	5	MBA	Continuing parallelism in settlement repertoire (Deverel-Rimbury) & metalwork	Strongest links to near-Continent, between Armorica and Lower Rhine

Fig. 3.2 A summary of maritime interactions in the later third and earlier second centuries BC with specific reference to southern Britain. After Needham 2009, 32, fig. 2.8

The similarities and contemporaneousness of settlement sites and field systems and the similarity in Deverel-Rimbury pottery on both sides of the channel in the Middle and Late Bronze Ages referred to by Marcigny as '*comosante culturelle March-Mer-du-Nord'* (Marcigny *et al.* 2002) is remarkable.

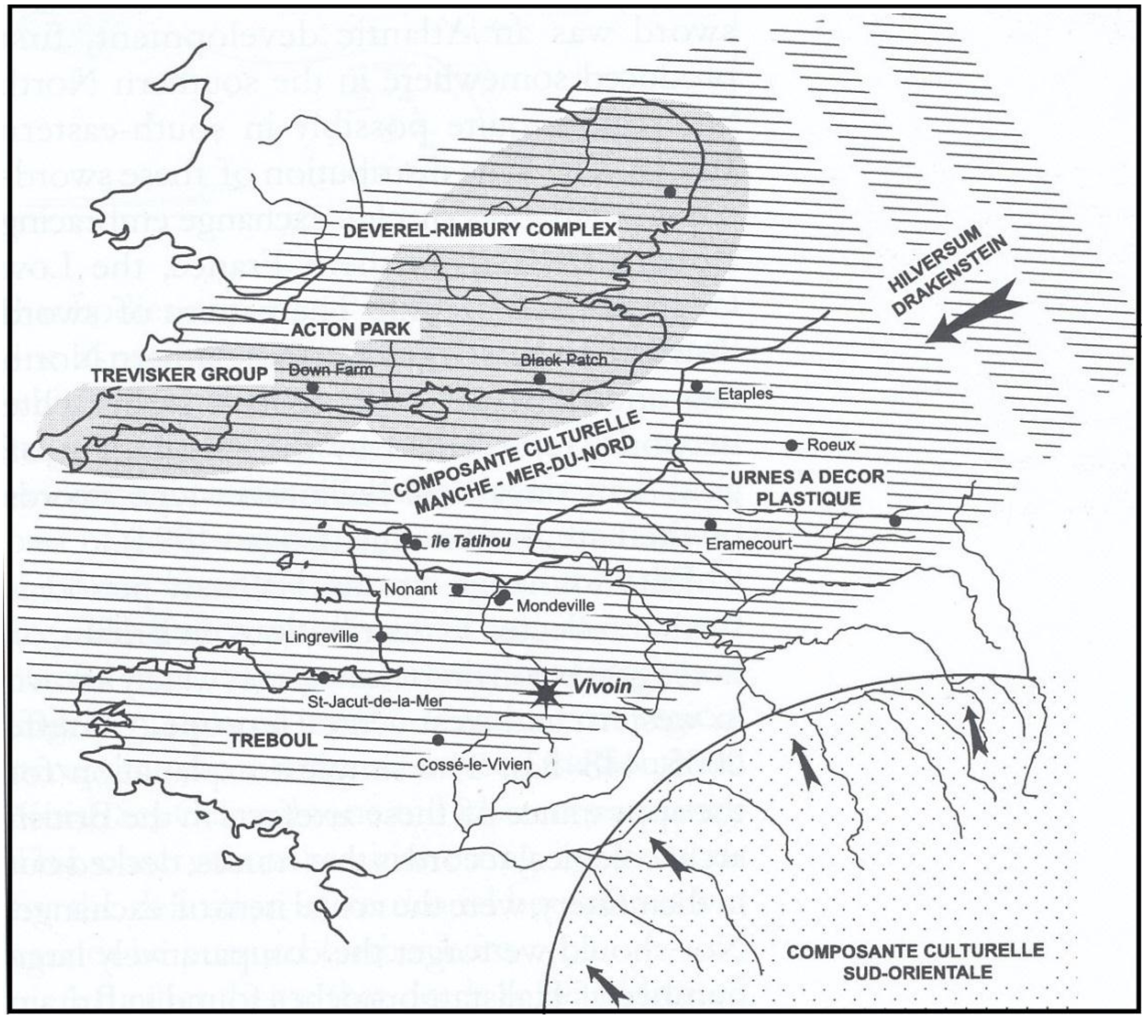


Fig. 3.3 The maritime culture of the North Sea Zone in the late second millennium BC. After Marcigny *et al.* 2002

The amount of evidence indicates a level of cultural contact well above that of purely trade with the exchange of beliefs, values, technology and artefacts as well as small scale movement of people for intermarriage to maintain social cohesion (Cunliffe 2009, 83-84). Many archaeologists are of the opinion that the exchange and access to prestige goods conveyed economic and political power (Bradley 1984; Thorpe and Richards 1984; Kristiansen 1998) and, as such, played a significant part in the emergence of hierarchical societies (Sherratt 1994; Earle 1997). Brück (1996, 74) disagrees with this view claiming 'that it is not only ethnocentric but is also androcentric….. as only certain classes of person are characterized as effective agents’. She argues that a man buried with an exotic object is often seen as a chief or merchant, whereas a woman buried with the same object would be viewed as a foreign bride given as a gift by one high status man to another, citing examples from Jockenhö (1991); Brück (1996, 74); and Kristiansen (1998). She also states that several archaeologists such as, Barrett (1994, 116-118); and Woodward (2000, 113-115), are of the view that not all artefacts deposited in a grave belonged to the deceased but that some were gifts from mourners. Fragmented artefacts associated with the deceased are also regularly found in the grave and some may have been gifts to the deceased during their life time. Some artefacts are also missing parts, such as Beaker ceramics. Others that are well worn, indicating longevity when deposited may be ancestral in nature. When inhumation burials were the norm in Beaker times human body parts could have been part of this fragmentation. Some of these bones along with parts of artefacts may have been retained by the living. From about 2000 BC to about 1100 BC, cremation burials became the main way of disposing of the dead. Token deposits of cremated bone weighing much less than would be expected are found in graves, suggesting distribution elsewhere, possibly to individual mourners. From 1100 BC when there are few archaeological signs of mortuary practices, possibly indicating excarnation is being practised, she states unburnt fragments of human bone (particularly skull fragments) are found in Late Bronze Age settlement sites (Brück 2006, 75-85).

Although Brück does not preclude the use of exchange for status and prestige, she suggests the use of exchange for more egalitarian reasons stating that ‘objects told more varied stories about people’s lives and that both people and objects were caught up in networks of mutual interdependency that placed socially acceptable limits on personal freedom’ (Brück 2006, 93).

Sites

There are five major types of visible evidence of Bronze Age life in Southern Britain. They are barrows, henges, enclosures/hillforts, field systems and linear boundaries and domestic or settlement sites.

Barrows in Sussex have been discussed in Chapter 2.5.2 Spatial Archaeology, as has the lack of convincing proof for the existence of henges in Sussex. Stonehenge in Wessex (modern day Wiltshire) was built in various stages from 3100 BC until 1500 BC and is thought to be the centre for annual burial rites and a meeting place for the surrounding area. It required a large amount of manpower to create and appears to have been built on a cosmological alignment (Parker Pearson pers. comm.). Large parts of Britain contain henges but none have been found in Sussex (Drewett *et al.* 1988, 63-79). However, recently Southern Archaeology have excavated a 'hengiform' monument at Lavant, West Sussex (Turner 1997). It is possible that in Sussex, enclosures and then hillforts took on some of the roles of henges elsewhere.

Work by Yates (2007) has shown that large numbers of field systems exist across the south of Britain and other areas of the country. These systems are showing a Middle Bronze Age date as research continues. Holleyman found that 23% of the Downs between the Ouse and the Arun still had visible signs of field systems in the mid-nineteen thirties (Holleyman 1935). There are two types of system: aggregate and co-axial.

Aggregates are usually associated with single or closely neighbouring farmsteads where systems may have been associated with cultivation areas or may have been aggregated between adjacent holdings.

Co-axial systems comprise straight and parallel land units subdivided into rectangular fields, usually but not always on an axis lying between 26-30º east of north suggesting a possible cosmological link to the layout (Field 2008, 206-214). Field is of the opinion that the creation of field systems shows confidence in 'land ownership and local organization' and that 'each complex of fields, coupled with the common experience of laying them out, would have bound people together and provided a framework within which to live' (Field 2008, 219).

Many field systems appear to be cut through by later (in Wessex from about 1000 BC) ditched and banked boundaries that could stretch for many kilometres or a few hundred metres. These boundaries appear to be based on river frontage or access to water but would not be a barrier to stock or people. Bradley *et al.* (1994, 152) are of the opinion that they are indications of differing attitudes and resources between communities although this is only based on evidence from Salisbury Plain. Considering the large amount of evidence for Early Bronze Age ritual activity in Southern Britain in the form of henges and barrows, there is very little evidence for settlements. Brück (1999, 69) considers the idea of residential mobility. This idea is based on the lack of residential sites as opposed to flint scatters that could be interpreted as domestic. She suggests this implies a very different life style from later periods. Local groups were not tied to particular areas of land but were free to roam the land from one resource to another as part of a wider community linked by kinship and exchange relationships. The development of a large number of settlement sites dating to the Middle Bronze Age consisting of roundhouses, often found in association with field systems, would imply a relationship with the area around the site and thus a centripetal lifestyle with the settlement at the centre.

Earlier excavations in both Wessex and Sussex tended to be of still easily visible Downland sites, mostly Middle Bronze Age. These created the standard view of Later Bronze Age settlement.

However, development funded archaeology has discovered many new Late Bronze Age sites on the coastal plain (Hamilton 2003). Hamilton argues that whilst there is a small amount of variability in the Middle Bronze Age, this dramatically increases in the Late Bronze Age. Her argument is based on analyses of pottery trends, metalwork, settlement densities and layout, deposition practices, site abandonment, burials, hillforts, land boundaries and resource territories and cultural/exchange networks. These differences are explained by long distance communications, relocation off the Downs to the coastal plain, a major reconfiguration of both domestic and craft manufacture and votive deposits of exotic and prestige metalwork. These changes make Sussex in her view much more akin to the Thames Valley than Wessex in the Late Bronze Age (Hamilton 2003).

Although a large amount of research has been directed at Sussex much of it is incomplete or of poor (by modern day) standards. It is therefore difficult to explore a patterned relationship of total sites throughout the Bronze Age. However, given the relative stability of the period, sites within reasonable communication and social interaction distance of each other have been grouped together as clusters.

3.3 Models

Four dominant models of Later Bronze Age Sussex, despite their longevity, are still quoted as the relevant models. Three specifically address the Middle Bronze Age (Ellison 1975; 1978; 1981; Drewett 1982; Brück 1995) and the fourth (Rowlands 1980) the Later Bronze Age.

3.3.1 Ellison

Ellison (1975; 1978; 1981) completed a series of analytical studies in the 1970's to produce models for the Middle Bronze Age in the South of England. She looked at settlements in terms of enclosure size (where known), underlying soil type, size and shape of buildings, building hierarchy and site catchment analysis, together with the distribution of pottery types and metalwork. She also analysed burial sites in terms of burial type and location, cemetery size and grave goods.

Macro analysis of enclosure size showed two types of enclosure, Group A which are small and Group B which are much larger. The larger enclosures control a higher proportion of high grade land than the smaller ones, to a statistically significant degree, indicating a high level of subsistence sufficiency and a ranked society. This interpretation is based on the work of Peebles and Kus (1977). A further implication is that there was pressure on the best arable land at this time.

Micro analysis of buildings and the artefact types found within them identified four different building types. These were:

1) Major residential structures. Circular with porches, these buildings fall at the larger end of the size range with a diameter of between eight and 12m. They contain a relatively high proportion of fine ware pottery, probably used for eating and drinking and stone implements associated with the production and maintenance of tools. Over half of them contain artefacts associated with weaving. Bronzes and other high status finds are usually located in these types of building.
2) Ancillary Structures. Smaller and more oval in shape, these huts have a high proportion of artefacts associated with food preparation.
3) Animal shelters. Medium sized with few artefacts.
4) Weaving huts. Small with weaving equipment in primary contexts.

The usual configuration for these buildings is a pairing of a major residential structure together with an ancillary building. The anatomical evidence of available human remains, men, women, juveniles and children in associated cemeteries and artefact distribution indicating a separation of minor female/domestic areas and larger familial, multi-role, activity areas, suggests an extended family unit of between ten and 20 inhabitants of various ages (Ellison 1981, 432).

Her study of burial sites showed that the most common type of internment was in a round barrow. Where cemeteries were used, the high degree of efficiency of the cremation process make sex and age analysis difficult. However in larger cemeteries or urnfields, where data survives, burials appear to occur in discrete clusters of between ten and 30 individuals.

Pottery distribution across the area was defined by detailed analysis of vessel size, shape and fabric, from which she was able to discern six distinct distribution areas in Central Southern England. Heavy duty wares were produced locally; everyday wares have a distribution range of ten to 20km and fine wares of 25 and 80km.

Most of her observations on metalwork distribution are taken from Rowlands (1971; 1973; 1976). There were three main industries involved in Middle Bronze Age metal work relating to functional type. They were tools (68%) with a distribution area of 15 to 25 km, ornaments (21%) 25 to 80km and weapons (11%) which have no apparent distribution pattern being ubiquitous in Southern Britain. She concludes her discussion on metal work by quoting the following passage from Rowlands:

'The limited spatial distribution of recurring assemblages of metalwork suggests a fairly static pattern of metalworking, implying that the craft was a dispersed occupation serving small settlement units and predicts a dispersed linear structure as a mode of organization. At the same time there is some evidence of specialization in production and more full time working, particularly for the production of weapons, linked with the possession of particular skills in complex casting. Such specialist pieces are also found over a much wider area than more mundane weapon types and it is possible to postulate a significant correlation between degree of specialization, the technical skill required to produce an object and the distance travelled in trade by the finished metalwork product' (Rowlands 1973, 596).

She notes the change in exchange systems between the Late Neolithic/Early Bronze Ages where wide ranging exchange systems were evident, to the discrete local systems evidenced by her study. These discrete local distribution networks foreshadowed the style zones of the Southern British Iron Age as described by Cunliffe (1974) and Hodder (1977). She feels the change in exchange patterns could represent closer social groups 'using group- specific artefacts of standard design' (Ellison 1981, 432).

The similarities between settlement site population and burial clusters suggested to her a standard social unit of between ten and 20, possibly equivalent to an extended family grouping.

In conclusion, Ellison feels the information from her study fits in with four of the five major areas defining a ranked society according to Peebles and Kus (1977). These are the ranking of persons and settlement sites, the location of settlements in optimal areas for subsistence sufficiency and evidence of organized production and distribution above that of the individual settlement, all of which are developed in the Iron Age (Ellison 1981, 413- 437).

3.3.2 Drewett

Drewett (1982) was sceptical of Ellison's catchment area analysis on two counts. Firstly the use of a circular model is dubious on the types of topography found on the Downs and secondly, the use of modern soil classifications. He used his excavations at Black Patch, East Sussex, a Later Bronze Age Downland settlement site, to produce an economic model.

The site contains a system of small rectangular fields demarked by a series of lynchets; several hut platforms and enclosures; a hollow way and a double lynchet trackway. Eleven round barrows are situated on surrounding ridges.

The excavation was part of a wider research project examining Neolithic and Bronze Age settlements on the South Downs and the site was in danger of destruction by extensive ploughing.

Drewett describes 'The purpose of this excavation was to answer a series of specific questions:

1. How many huts, of what type, are situated on a house platform and what activities were practiced in the huts? This question was answered by the total excavation of the platform and the two-dimensional plotting of all artefacts and ecofacts.
2. What was the economic basis of this hut cluster? This question was answered by the analysis of material obtained by bulk water flotation of the contents of pits and samples obtained from the gridded floors of the huts together with all hand excavated material.
3. What social group occupied the hut cluster? The consideration of this question derived from the analysis of data recovered during the answering of the first two questions.
4. When and for how long was this hut platform occupied and how was it deserted? This was answered by obtaining C-14 dates and dating the bronze and pottery on typological grounds. The period of occupation was established by sectioning all postholes, considering the length of life of earthfast posts and any evidence for

replacement. The method of desertion was considered by examining the *de facto* rubbish on the hut floors and the survival of demonstrably curatable objects like bronze within this rubbish.

5. Were hut platforms 1 and 2 contemporary with 4, or was there movement up or down the slope? This question was tackled by an area excavation of platform 1, this time using a machine to remove the modern plough soil and a transect sample of hut platform 2.
6. Was the social grouping living on platform 1 similar to that resident on platform 4?
7. Were the enclosures for stock or did they contain structures? To answer this question, transect samples were cut across enclosures 1, 2 and 4.
8. Are the lynchet systems contemporary with the hut platforms and enclosures? To answer this question two lynchets were sectioned.
9. Are all, or any, of the barrows intervisible with the settlement contemporary with it? To answer this question all barrows were contoured to establish their form and then transect samples were cut through the eight ploughed samples. The three unploughed barrows, being something of a rarity in this area, were not sampled' (Drewett 1982, 323-25).

By observing and collating the data in a manner conducive to his research questions and by considering both pre and post-depositional issues, Drewett was able to define not only the status of the huts but also the activity areas within the huts on the basis of the depositional patterning and classification of the surviving artefacts. Using ethnographic parallels, he concludes that the hut platform belonged to an extended family group, possibly members from three generations of the same family (Drewett 1982, 325-343).

On the basis of carbonized seeds and the bone assemblage found at the site he suggested that mixed arable and pastoral farming was practised. He was also able to produce a calendar of economic activities and food consumed which he supported with a detailed list of resources and the journey times taken to those resources from each known Later Bronze Age site in the area.

Drewett concluded that the settlement was part of a group of similar settlements, all of which were self-sufficient. Therefore, any redistribution of produce between Downland settlements would be for social rather than economic reasons. However, redistribution to other neighbouring ecosystems was likely. The occurrence of a bronze casting header high up in the Cuckmere valley is possibly indicative of a river valley economic sub-group.

The main criticisms of Drewett's work are of his interpretation of the hut floor artefacts being *de facto* rubbish rather than secondary or deliberate closure deposits (Barrett and Needham 1988, 135-60; Seager Thomas 1999, 45-47) and his architectural interpretation of Hut Platform 4 (Russell 1996, 33-38).

Russell, having studied the artefactual and structural evidence, bases his criticism on Ellison's Later Bronze Age settlement model of single united compounds (Ellison 1978; 1981) and proposes that the houses are more likely to form two temporally discrete settlements conforming to Ellison's model of a main or 'living hut', plus subsidiary buildings.

It is strange that his criticism, produced some fourteen years after the publication of the original excavation, in a time of post-processual approaches and interpretations of archaeology, should be along the functionalist routes of the positioning of barriers (fence lines) and access to water, particularly as he has produced several interpretative works of archaeology (Russell 1996; 1997; 2001; 2002).

3.3.3 Brück

Brück looks at the social effects of synthetically manufactured space in order to understand the Early- Middle Bronze Age transition (Brück 1995, 88).

She also believes too little use of formation processes has been employed in post-processual studies (*ibid*, 84). Primarily, the differentiation between refuse disposal, *de facto* rubbish, primary rubbish or secondary rubbish (Schiffer 1972) and structured deposition (Richards and Thomas, 1984), be it during the lifetime of a site (Hill 1995), or on its abandonment (Cameron and Tomka 1993) has not been fully considered.

She combines these two approaches 'comparing Early and Middle Bronze Age settlements in terms of the architectural ordering of space and the treatment, distribution and deposition of different categories of material culture. Such detailed research will enable the identification of social relationships over time in the structuring of settlement space and will allow us to consider the effects that these might have had on the constitution of particular sets of social relationships. Clearly changes in the practical logic that people apply in day-to-day life will be indicative of wider shifts in social and material circumstances' (*ibid*, 88).

From her research, she concludes that the fragmentation of society caused the Early-Middle Bronze Age transformation from the extensive kinship and exchange networks of the Early Bronze Age, to the small 'self-sufficient' extended family settlements of the Middle Bronze Age, rather than economic pressures (*ibid*, 225). The lack of security brought about by this social unrest caused the enclosure of fields and settlements, enabling a sense of ownership and a stage on which to 'establish predictable routines in day-to-day life.' She is, however, unable to say what caused this fragmentation (*ibid*, 31).

It is interesting that both Drewett and Brück agree on a lack of economic pressures during this period.

3.3.4 Rowlands

Based in part on the work of Ellison (1975; 1978), Rowlands (1980) has created an exchange model for the Later Bronze Age. He is keen to point out that this is a model for exchange, not trade.

Starting with Ellison's view of the self sufficient tiered farming settlements, he argues that there would have been local competition in accumulation of wealth and prestige.

Similar competition would also have been evident in coastal and riverine groups. This would have been more intense due to the relative ease of transportation to these settlements.

He envisages a core area of coastal provinces on either side of the Channel feeding into a periphery of more inaccessible inland sites with maximum growth in the core areas and the peripheries dependent on the core for access to the system.

This is partly based on the similarity of hoards on either side of the Channel and the restriction to the southeast of larger and more sophisticated weapons of continental stylistic origins. In his own words 'we are suggesting that an association between elite exchange, political alliance and the crucial role of the weapon complex in gift exchange formed part of a process of political and economic expansion, within which, from a local rulers' point of view, it was advantageous to be incorporated, given the economic benefits it bought' (Rowlands 1980, 39). As with Ellison's model, there is competition for resources over and above those required for subsistence alone.

Chapter 4. Research Methods

4.1 Introduction

As can be seen from Chapter 3, a dichotomy has developed in archaeology in the way space is considered. It has either been looked at from a functional, practical view (Drewett 1982) or as a stage from whose scenery human actions and purposes can be read (Brück 1995). Whilst not all human activities are purely functional, as is evidenced by the many strange depositions on and off prehistoric sites, e.g. Itford Hill's chalk phallus (Burstow and Hollyman 1957) and the many hoards of metal (Bradley 1990), self preservation requires the input of a certain amount of labour and planning. This research was conducted from the view that both processual and post-processual input is required to understand why Middle Bronze Age sites were initially chosen for occupation and why they were abandoned.

The research endeavoured to cover as many different avenues of enquiry as possible, ranging in scope from the highly objective scientific study of sedimentary formation processes to the use of highly subjective phenomenological survey.

The investigation was begun with renewed excavations at Black Patch. It is assumed that the reader has an understanding of basic excavation techniques and only those that have been added to the normal repertoire of 'Rescue Archaeology' will be discussed. This will be followed by an explanation of the use of archival data to integrate it into the study.

4.2 Excavation of Black Patch Settlement

4.2.1 Magnetic Susceptibility Survey

Human activities can cause magnetic enhancement of soils. The primary cause of this phenomenon is burning, although other pedalogical processes associated with human activity, e.g. the presence and decay of organic waste, can also cause magnetic enhancement, particularly if associated with burning (Clark 1990, 101). The degree of enhancement can be measured quantitatively and relatively quickly. Surveying the site at the occupation level helped to identify occupation zones, activity areas, middens and, particularly, hearths. The level of magnetic enhancement will change as you move from context to context, with areas that have never been occupied showing the lowest levels and hearths the highest.

Magnetic susceptibility survey was used at the Neolithic site at Barnhouse, Orkney, where one of the houses was bigger and better constructed than the others. It had six recesses set in its walls. It also contained two non-contemporary hearths. On the basis of the high quality construction, the cleanliness of the open communal area and the concentration of artefacts, burnt clay and organic debris around the walls and in the recesses, the Director, Richards, hypothesised that the house fulfilled a communal function. The hypothesis was supported by the magnetic susceptibility survey which showed low readings in the open area except for the two hearths and high ones around the walls, recesses and hearths (Challands 1992, 38-40).

4.2.2 Phosphate Survey

The bulk of occupational debris on most domestic sites will be organic in nature, consisting of food scraps, cloth, wood, human and animal waste and burials. This material will, in most conditions, totally disintegrate over time but the organic components will remain in the soil much longer. By far the most diagnostic and easiest to trace is phosphate. The phosphate content of the undisturbed archaeology is reflected in the topsoil (Craddock *et al.* 1985). Surface phosphate anomalies deriving from underground features are not hidden by the application of modern phosphate, such as fertilizer or faeces (Walker 1992). Phosphate surveys are often taken in tandem with magnetic susceptibility surveys. This was the case at Barnhouse; where the two surveys are highly compatible and indicate that the organic material (high phosphate) and the burnt material (high magnetic susceptibility) were both cleared together, to the sides of the building in the vicinity of the north-eastern hearth (Challands 1992). Phosphate analysis was also conducted through all of the archaeological levels and used together with the magnetic susceptibility survey to assist in site interpretation.

4.2.3 Three-Dimensional Macro and-Micro Artefact Patterning

Peter Drewett's original methodology for the location of activity areas was to plot in two dimensions the location of all items of *de facto* rubbish (i.e. still usable tools and materials relevant to a certain activity and abandoned in an area used for that activity) (Schiffer 1976, 30-34). He was of the opinion that, whilst there may be some vertical alteration to artefact patterning due to the gradual lowering of the chalk bedrock caused by solution processes, horizontal patterning was still protected. This opinion was based on years of experience in the field. From this information, he was able to identify areas of craft activity, food storage and preparation (Drewett 1982, 328-340). Since Drewett's excavation, much work has been published on depositional and post-depositional factors.

Ethnographic studies of refuse management, principally that of Hayden and Cannon (1983) but also Murray (1980) and Siegel and Roe (1986), have shown that these endeavours could be mistaken (in the archaeological record) for activity areas (Hayden and Cannon 1983, 111). Many studies of ethnographic site abandonment have also been published (Stephenson 1982; Tomka 1993; Graham 1993; Stone 1993), which show the diverse ways in which sites are treated on abandonment. These studies have allowed archaeologists to interpret artefact patterning in different ways, allowing ritual intent as well as material concerns to be taken into consideration (e.g. Brück 1995; 2001; McOmish 1996; Hamilton 1998; Nowakowski 1991).

The practice of structured or non-economic deposition (Richards and Thomas 1984), has seen many books and articles written on it, the most important being by Bradley (1990) and Hill (1995) and to a lesser extent Brück (1995; 1999; 2001), Hamilton; (1998) and Chapman (2000a; 2000b). This wealth of literature has, however, also complicated matters somewhat.

Schiffer has expanded his work to cover abandonment processes and deposition and activity areas in response to these studies. It therefore makes sense to analyse the artefact assemblages from all the hut floors and activity areas from a behavioural point of view, particularly as we have a large amount of data from Drewett's excavation.

The study of post-depositional effects has also progressed: those relevant to Black Patch will be mentioned.

The calcareous, aerobic conditions of the South Downs provide good preservation of flint, well-fired pottery and bronze but cause bones to become brittle and powdery and the total decay of all non-carbonised organic material (Cronyn 1990, 40-41; Bell *et al.* 1996, 238-242).

Gravity will cause downslope movement of artefacts when the gradient of the slope is greater than two percent, particularly when they are lubricated with water. The components of the sediments caused by this movement will be poorly sorted by size and of angular shape (Allen 1992; Boardman 1992; Paddaya and Petralgia 1993, 65-69). Worm sorting has the effect of moving artefacts downwards, as voids are created below and worm casts above. In thin Downland soil, artefacts can be sorted down to a stony layer just above the chalk bedrock, destroying any vertical patterning (Drewett 1999, 26-27).

Trampling rapidly reduces the size of artefacts, particularly on thin chalk soils. It will also cause larger items to come to the surface where they are more susceptible to horizontal movement. Trampling on artefact floors can be differentiated from floors created by burrowing animals by the smaller mean sherd size of the pottery (Blackman 2000, 493-495).

The degree and direction of displacement is, for many of the above mechanisms, dependent on the size of the artefacts concerned. Micro-artefacts, defined by Sherwood (2001, 328) as being less than 6.35mm in size will therefore show different patterning to macro-artefacts when subjected to the above processes. Activity areas defined by *de facto* rubbish should show similar patterns of micro and macro-artefacts. Areas of primary or secondary rubbish should be devoid, or have a much reduced presence, of micro-artefacts that are too small to be collected with the rest of the rubbish. This would also be true of the areas containing the deliberate placement of artefacts as seen in some abandonment ritual. Conversely, areas that are regularly cleaned might show a build up of micro-artefacts in inaccessible areas or postholes.

Micro-artefacts are much less affected by processes like colluviation and worm sorting and are vertically sorted from macro-artefacts by burrowing animals. For these reasons, it was intended to compare micro and macro-artefact depositional patterning in three dimensions rather than two, in an attempt to understand the depositional and post-depositional processes involved.

It should be noted that the regular use of the total station (a device for measuring and recording bulk three-dimensional locations automatically) on most modern archaeological sites makes this a lot easier than at the time of the original excavations. A total station was used to record three-dimensional macro-artefact patterning. The recording of three-dimensional micro-artefact patterning was achieved by taking scrape samples across predetermined 500mm horizontal squares at regular vertical intervals across archaeological features.

4.2.4 Particle Size Analysis

The distribution of sedimentary particles by size can help determine the depositional regimes by which the sediments were formed. This is achieved by sorting the particles into eleven different size classes between 2.0mm and 0.002mm, analysing the percentage in each particle size group and comparing this data with charts containing the distribution patterns of known depositional events. This evidence will help in the understanding of not only how the sediments were initially formed but also any erosion that might have taken place (Catt 1992). Samples for particle size analysis were taken not only from the site but also the surrounding area for comparison.

4.2.5 Soil Micromorphology

Soil micromorphology is very simply the study of soil and sediment formations under microscopic conditions. This is achieved by taking intact columns of soil, impregnating them with a resin to stabilize their structure, creating thin sections from the impregnated column and studying these sections under differing light sources through optical and scanning electron microscopes or micro-probes. Microscopic observation of the soil structure is an excellent method of ascertaining formation processes by studying the type of, orientation of, attrition to and spread of, microscopic particles. Microscopic anthropogenic remains are also observable, as are pollen, phytoliths, bone, spherulites and other organisms, which can be used to identify activity areas. Activity areas can also be identified by the application of a micro-probe to the thin section, which can identify trace elements, organic phosphate and carbon (Barham and Macphail 1995 and Matthews *et al.* 1997). Soil columns were taken from occupation layers together with control columns taken from areas with no archaeological features.

In addition it is hoped that this technique will throw light on resource management activities. One of the main difficulties for settlements on the Downs of any era is the lack of readily available water. Drewett estimated it would take 35 minutes to walk to the nearest spring and 48 minutes to the nearest river from Black Patch. Taking cattle to these water sources would take approximately two and a half times as long (Drewett 1982, 392-398). Whilst this is achievable (many people today live further from water), it is not ideal. However, on many Middle Bronze Age sites, there occur shallow pits interpreted as and referred to as, ‘ponds’. As long ago as 1937 Curwen (1937, 190), in discussing shallow depressions found at Plumpton Plain, states ‘these were in all probability intended for collecting water, though whether they were successful may be doubted for chalk will not hold water for long unless puddled and excavation of two of these hollows showed neither puddling, nor clay lining, nor any accumulation of chalk sludge such as is found in catchment ponds’. Evidence of a clay lining, invisible to the naked eye, may show up under high magnification in the sedimentary layers contained in the feature and/or the underlying chalk bedrock. If the amount of clay in these layers showed an enhanced level over a column sample taken from an area where there were no archaeological features, this would reinforce the ‘pond’ theory.

Two such features were identified by Drewett (1982, 327) on Hut Platform 4. Such a feature was found during the excavations; three soil columns were taken through the feature into the underlying chalk for microscopic examination to see if there was any evidence of a clay lining.

It has been stated that the spread of Bronze Age pottery sherds over field systems of a similar date to those at Black Patch was evidence of manuring (Fenton 1981). If this is the case, collection and storage of human and animal dung would presumably need to have taken place if manuring was an annual event. If it was collected in pits or hollows, it could still be visible in the archaeological record, for although coprolites do not survive well on chalk soils, micro-sized calcite faecal spherulites do, even surviving burning. These spherulites are found in ruminants and omnivores. They are formed in the small intestine and excreted in the animal’s faeces (Canti 1998). The presence of these spherulites in pits or depressions could be evidence of manure storage. Soil columns were taken from all pits and hollows found on the site where it was possible to do so.

4.2.6 Spatial Analysis of the Pottery Assemblages

Ellison (1982, 327) makes much use of the spatial patterning of ceramic sherds of various thicknesses to indicate high and low status areas. She associated high status areas with thin (fine) sherds and low status, such as cooking, food storage and preparation areas with medium and thick sherds (Ellison 1982, 364). The size and concentration of pottery sherds was used at two Late Bronze Age settlement sites, Aldermaston Wharf, Berkshire and Knights Farm, Burghfield, Surrey, to analyse density of occupation and identify inter-related features (Bradley *et al.* 1980).

Brück (1995, 175) considers ceramics an ‘especially sensitive indicator of formation processes’. She recorded several parameters for each sherd of Early Bronze Age pottery found in the upper layers of the ditches of the Neolithic causewayed enclosure at Windmill Hill, Wiltshire and each sherd of Middle Bronze Age pottery found at the Middle Bronze Age site at Poundbury, Dorset, in order to compare the two sites. The parameters used were context, position of sherd on pot, rim form (where applicable), greatest length, average thickness, degrees of abrasion to edges and surfaces, fabric and decoration. This information gave insight into formation processes and areas of discard. Amongst her conclusions are that the heavily abraded and fragmentary nature of the sherds from Windmill Hill are indicative of refuse management, whilst the larger sherd size indicates more regular episodes of site refuse maintenance at Poundbury, (ibid, 216).

The pottery assemblages found at Black Patch will be subjected to a similar examination to the one used by Brück, containing as it does relevant aspects of both Ellison’s and Bradley’s work, in order to identify similarities and differences in formation processes and therefore identify various human behavioural patterns and household activity areas.

4.2.7 Belief Driven Spatial Analysis

This spatial analysis attempted to identify similarities and differences in the location and orientation of points, believed to be critical in both space (i.e. barriers, entrances and pathways) and time (i.e. births, marriages and deaths), not only in the domestic arena (Oswald 1997; Brück 2001) but also the wider landscape (Ruggles 1999). These locations may be functional, for example, in locating the position of sunrise or sunset in the landscape at critical points of the agricultural calendar, they may be ritual to locate such events as the winter solstice for religious purposes, or symbolic, such as special depositions at entrances.

Parker Pearson and Richards (1994, 47-54) suggested a cosmological model for the roundhouse based on the sun and the position of the doorway. The doorways located in the south-east faced sunrise. If the roundhouse is divided along the axis of the doorway through the centre of the house activities requiring light will be practiced on the left-hand, southerly and lighter side with the darker right-hand, northerly side reserved for sleeping. Thus people moved around the inside of the roundhouse in keeping with the movement of the sun. The design (round) and the orientation reflected a sun based belief system. Hut orientation and artefact patterning will be used to investigate the above and other cosmological models.

4.2.8 FIBS analysis of crop seeds and usage of other seeds found on site

FIBS analysis (The Functional Investigation of Botanical Surveys) investigates the impact of ecological processes on species’ distribution within a wide range of habitats.

It is then able to analyse a specific collection of weed seeds found in a sample of carbonized seeds from a cultivated crop such as barley. The attributes of these seeds, which should come from a secure context, can then be compared to modern seeds of the same variety.

Species that share the same functional attributes normally share the same habitat (Grimes *et al.* 2007).

Attributes such as preferred environmental conditions, season of germination, height of leaf canopy, onset and length of flowering season etc can identify not only environmental conditions but also husbandry techniques such as irrigation, weeding techniques and period of sowing and harvesting. The larger the variety of weed seeds in the assemblage the better the analysis (Bogaard *et al.* 1998; 1999; 2001; Bogaard 2004; Charles *et al.* 1997; 2002; Jones *et al.* 2005). FIBS analysis combined with agricultural ethnographic studies will be used to compare husbandry techniques on Later Bronze Age sites where there is a secure assemblage of carbonised grain.

4.2.9 Non-cereal seeds

In 1991 the body of a man from 3200 BC was found preserved in alpine ice. He carried with him birch fungus known to have antibacterial properties. The carbonized remains of many different types of weed seeds have been found on Bronze Age sites. It is highly probable that some were used for medicinal purposes. All known plant remains on Downland Bronze Age sites were scrutinised in an endeavour to see what possible remedies were open to their inhabitants and if this changed by site or over time. Seeds can be found in barrows, hut floors and postholes as they were during the 1977-79 excavation at Black Patch. It is possible that they are all accidental arrivals rather than collated and this must always be borne in mind.

4.3 Dry Valley Bottom Research

By analysing the layers of the infilling deposits of the dry valley beneath the Black Patch settlement area, it will be possible to date them (by artifactual evidence and radiocarbon dating), understand the environmental conditions under which they accumulated (by molluscan evidence), understand the mechanisms responsible for their transport and deposition and determine the uphill location from which the sediment came. Deductions were made using methods, particle size and soil micromorphology. This was achieved by excavating a cleaned face across the valley bottom and recording the section. Artefacts discovered in the accompanying trench were three-dimensionally plotted. Samples from the section were taken vertically at regular intervals. The rest of the sample underwent particle size analysis (Bell 1983, 120-1). The evidence accumulated from this type of study added not only to an awareness of environmental conditions in the past but also to an understanding of the upslope activities and soil formations commensurate with those conditions. From this information, deductions were made as to the types and to the degrees of agriculture practised (Bell 1983; Wilkinson *et al.* 2002). Three other smaller trenches were dug in the valley on the westward side of the spur containing the settlement for comparison purposes.

4.4 Field walking

Field walking is the methodical search for surface artefacts. This is best achieved when the ground has recently been ploughed and harrowed. The distributions and concentrations of finds will aid in the search for settlement areas not identified by the original survey (Shennan 1985; Entwistle 1994; Blintoff 2000).

4.5 Landscape Survey

4.5.1 Topographical Survey

A new topographic survey of the field system surrounding the site was made to find its extent and any phasing still visible. A hachured survey method was used employing the conventions of the RCHME (Figure 4.1).

The alternative would have been a contour survey but this was deemed to be impossible given the size of the site and the cost in time and resources this would involve.

Bowden states ‘Contour survey cannot:

a) distinguish between natural and man-made slopes

b) show chronological relationships between features

c) give consistent depiction of features as they turn across or along slopes…[and] ‘that the subjectivity of the hachured survey is its strength because that is where the fieldworker’s judgement, experience, knowledge and interpretive skills can be deployed.’ (Bowden 1997, 66). He illustrates his points with a plan (Figure 4.2) of Wykeham Forest in North Yorkshire.

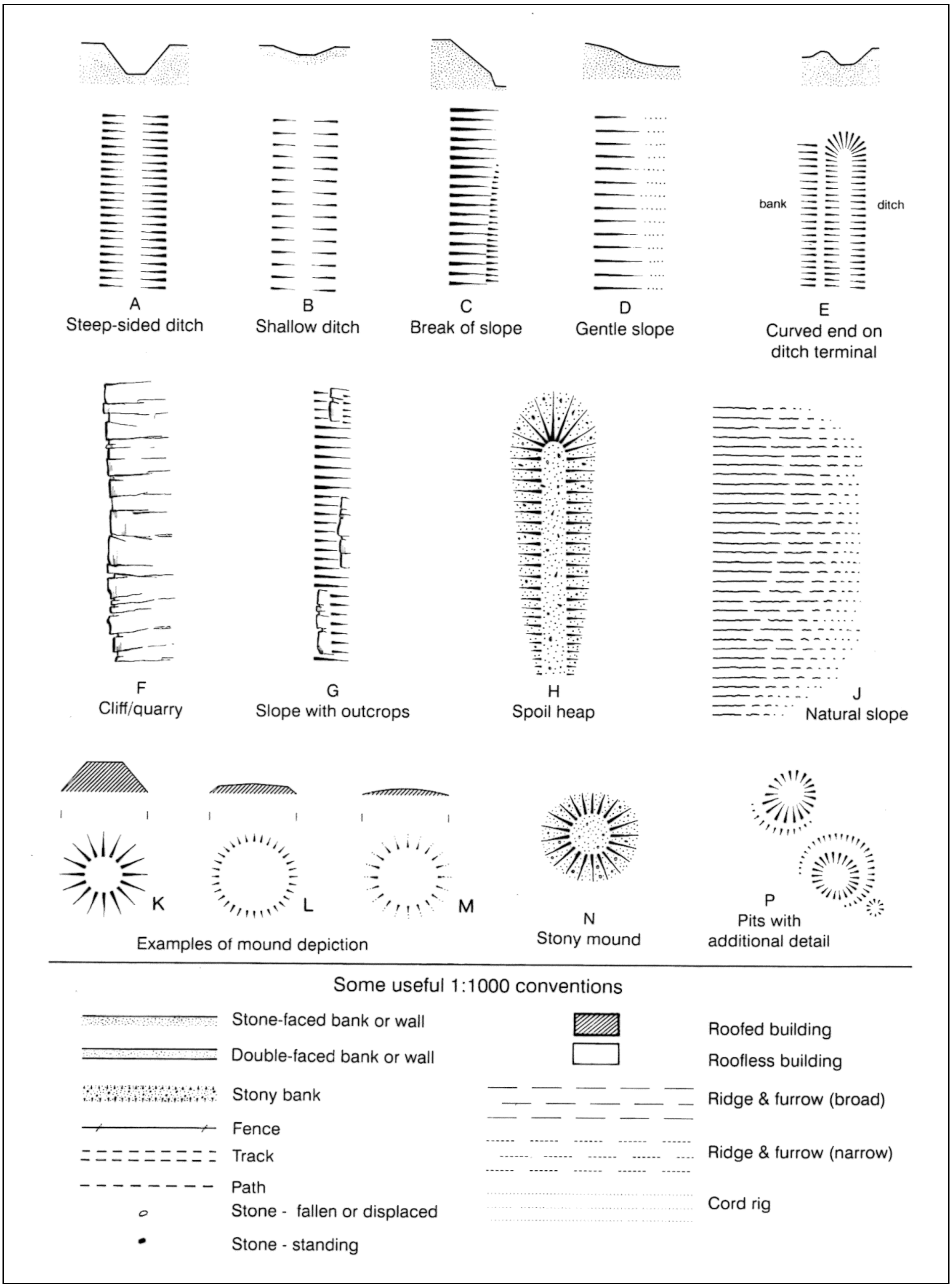
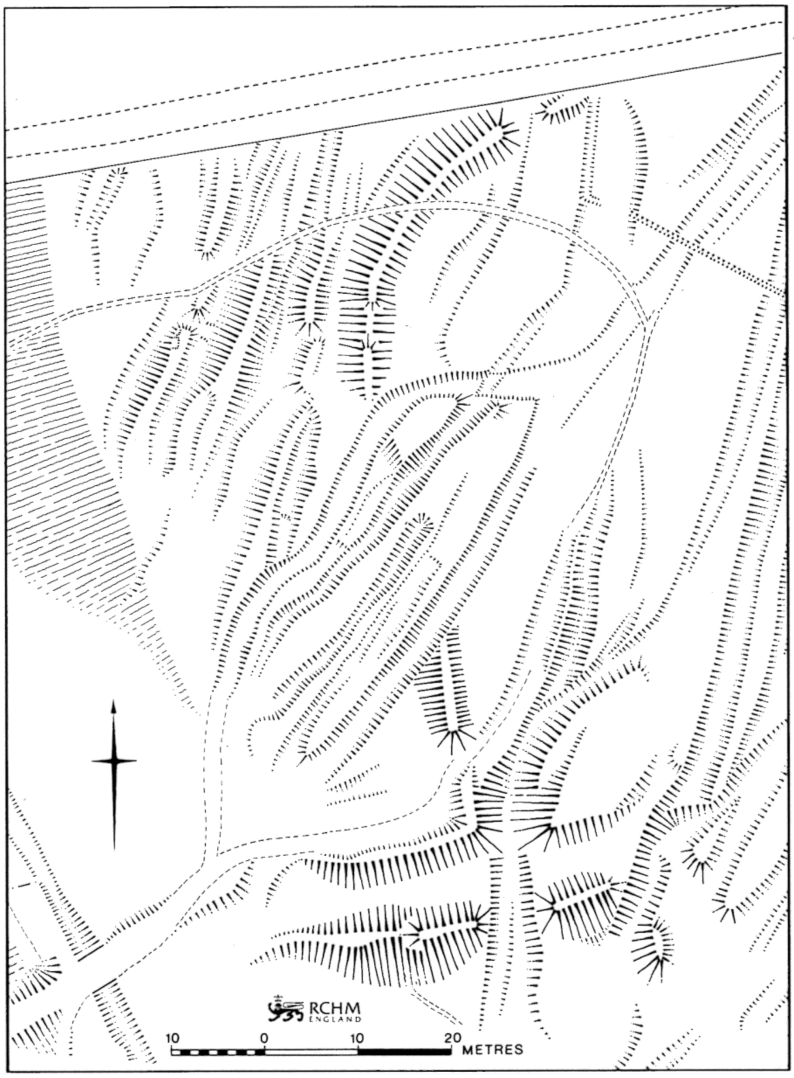


Fig. 4.1 Conventions; hachure depictions of earthworks and associated features. After Bowden 1999, 169 fig. 85



29 *Wykeham Forest (North Yorkshire): a series of braided hollow ways on a south-facing slope cutting an earlier bank and overlain by more recent tracks and paths. Contour survey could not show the chronological complexity demonstrated in this hachured survey diagram. Extract from field survey archive plan, original scale 1:1000.*

Fig. 4.2 Wykeham Forest, North Yorkshire. After Bowden 1999, 66, fig. 29

4.5.2 Phenomenological Research

Phenomenology, as it was used in this research, was viewed as an individual's reaction to his/her surroundings and as such, might help identify why Black Patch was settled. A major criticism of phenomenology is that it is usually one person's subject centred view. He/she will have had totally different life experiences to the actual inhabitants of an archaeological landscape (Brück 1995). However, it will be noted from Chapter Two that archaeological research is almost always subject to fashion and the prevailing social ideals. In light of this, phenomenological research has as valid a place in settlement studies as those already mentioned. There remains the problem that phenomenological research has usually been carried out by an individual and is therefore prone to bias, be it male/female, young/old or any other social influence. To overcome this problem as many volunteer excavators as possible were used. Whilst this will not be a demographically representative group, it was hopefully large enough to counter this problem. Also, it was a group who had worked and interacted in the environment of the site for a short time. This may be a similar experience to those who originally chose the site and who might well have passed through either to visit the surrounding barrows or by way of their hunter/gatherer dominated lifestyle. A questionnaire was given to all volunteers who had spent three or more days on the site. The questionnaire contained functional queries as well as questions relating to 'social memory' (Tilley 1994, 2), security and reaction to surroundings as to why the site was chosen for settlement. It is hoped this approach will put the respondents at ease and enable them to truthfully answer those questions that require them to expose their reactions to their surroundings. This is a possible way forward at looking at non-sensory specific issues such as sense of security, beauty of surroundings and association with place.

Intervisibility studies have mainly been the province of post-processual archaeologists who wish to demonstrate control of the landscape on the one hand and reaction to the landscape on the other (Tilley 1994 and more specifically Tilly 1996). Drewett, in his publication of his excavations at Black Patch, does indicate Bronze Age barrows that are intervisible with the settlement site but does not follow this up in the text (Drewett 1982, fig. 2, 323). The ability to see so many barrows is indeed noteworthy, as it associates the site with previous activities and possibly ancestors. It is also noteworthy that the site is intervisible with Seaford Head, the site of a Late Bronze/Early Iron Age hillfort. Post-Deverel-Rimbury pottery has been found at Black Patch and Deverel-Rimbury pottery near the site at Seaford (Smith, 1939). The hillfort at Seaford Head is intervisible with two similarly dated hillfort enclosures at Castle Hill, Newhaven and Belle Toute. It is placed at the only viewpoint into the Weald from the coast, via the Cuckmere Valley (Hamilton 1997, 98-99). The intervisibility may show earlier use of the Seaford Head peninsula particularly as Deverel-Rimbury pottery has been found in its vicinity (Smith 1939).

Intra-site visibility was also studied. The ability to watch over animals and children from activity areas would appear to us, living in the 21st century, to be important, as would the ability to observe approaching strangers. A series of 360º drawings were made at marked positions. These were drawn by one artist and are therefore subject to her solo interpretation.

Sound is also a major medium of communication, particularly in an area subject to sea mist throughout the year. Experiments were conducted to check intra-site sound communication. Topography can also affect localized weather conditions, such as frost pockets and cloud movements which whilst immeasurable were sometimes quite striking and will be discussed in the phenomenological section.

4.6 Analysis of Subsistence Strategies

Fleming (1985) has noticed a dilemma concerning Middle Bronze Age sites, such as Black Patch and Itford Hill, as well as others like Fengate in Eastern England, Shearplace Hill in Dorset, Gwithian in Cornwall and the Dartmeet system on Dartmoor. He observes that 'Recent work in southern and eastern England has revealed, with increasing clarity, a second millennium BC settlement pattern consisting of houses scattered in ones and twos, or at best grouped in small hamlets, accompanied by field systems that look as if they were laid out by a larger community…' The archaeological evidence forces us to consider the nature of the relationship between on the one hand, the individual household so clearly revealed by some analyses (Ellison 1978; 1981; Drewett 1979; 1980; 1982) and on the other, the community responsible for laying out the field system (Fleming 1985, 130-131). This dilemma is extremely relevant to the research questions. Drewett suggests that the house platforms at Black Patch might have been occupied successively but even an extended family group, as is suggested by Drewett for one of his house platforms, would appear to struggle to maintain a field system of the size at Black Patch particularly as it could have been larger. By adopting an approach similar to the one described by Mercer (1981) it was possible to identify the parameters of farming that were possible at Black Patch. By looking at the area and shape of the field system, an estimation of the initial labour cost required can be made. Using data on crop yields from Butser Ancient Farm Research Site (Reynolds 1981, 109) and other sources and the output from livestock, dairy and meat, for various combinations of land use and farming practices, a range of calorific outputs can be ascertained. Then, by using data on minimum calorific intake of adults, children and infants, we can calculate a maximum number of people that could be fed from each different combination of farming activity. If we compare this with the labour input required for each strategy, we can identify not only all possible subsistence strategies but also the feasibility of strategies that called for overproduction or specialisation.

These strategies, once identified, can be checked against the environmental and archaeological record to identify areas of agreement or disagreement with the above model (Greis 2002). Over and above the obvious identification of grain or pulses in the archaeological record, Greis has catalogued over 300 species of plants likely to be found in prehistoric farming communities. These are indicators of the local ecology, as different plants will thrive in different conditions. Economic activities such as fallowing, soil depletion and sowing season can be identified by different groups of plants. Observation of the archaeological deposition of plant remains can identify harvesting methods, threshing, storage and parching.

Identification of the species bone type and the age of the domesticated animal remains will identify meat production from ancillary activities such as dairying and wool production (Greis 2002, 10-20).

Greis has also constructed a series of socio-economic predictive models to analyse archaeological data from farming communities. These models can be used to detect evidence of self-sufficiency, overproduction, consumption and intensification of production, either in response to economic stress or to produce surpluses, specialization and diversity, reciprocity and redistribution (Greis 2002, 21-30). This evidence will not only help in understanding the economic strategies undertaken at Black Patch but also help our comprehension of the socio-political world of which it was part.

4.7 Archival Inter-site Comparisons

4.7.1 County Sites and Monument Records

The principal databases that were used in this research are the two County Sites and Monument Records (HER), one from East Sussex and one from its counterpart in West Sussex. These records contain most archaeological monuments, sites, field systems and find spots in Sussex. The area around the site at Black Patch has been extensively and methodically metal detected in association with the Portable Antiquities Scheme and has hence been well recorded and added to the HER. By plotting Late Neolithic, Bronze Age and Early Iron Age data from around the site onto a map, a better understanding of the changing use of the landscape will be gained.

4.7.2 Other Sources of Archival Data

Excavation reports and publications were used to compare excavations at Black Patch with elsewhere. From this information a gazetteer of sites was formed. Having made conclusions about life at Black Patch and the reasons for settlement and abandonment, it was then compared with nearby sites to see if they concur with the findings. They may, for example, be similar and independent, or they might be dissimilar but co-dependent. This cluster (sites close enough together to have possible political or economic associations) was then compared with two other Downland clusters to see if they concur with the pattern. Finally, evidence for relationships with Off-Downland communities was examined to see if this has any bearing on the research questions.

4.8 Conclusion

By using a multi-faceted approach to the archaeological data a compelling case has been built up for the reasons behind the original settlement, the nature of that settlement and its subsequent abandonment at Black Patch, whether internal or external, a purely local phenomenon or part of a wider movement. Human beings are complex and therefore these reasons may be singular or compound. The research methodology is capable of discerning the breadth of reasoning behind the decision making process. However, it must be added that the present research is only possible because of the previous efforts of others which was original and cutting edge in its time.

Chapter 5. The 2005-6 and 2007 Excavations at Black Patch

5.1 Introduction

The Later Bronze Age settlement site and field system at Black Patch, East Sussex, previously partially excavated by Drewett was chosen for excavation.

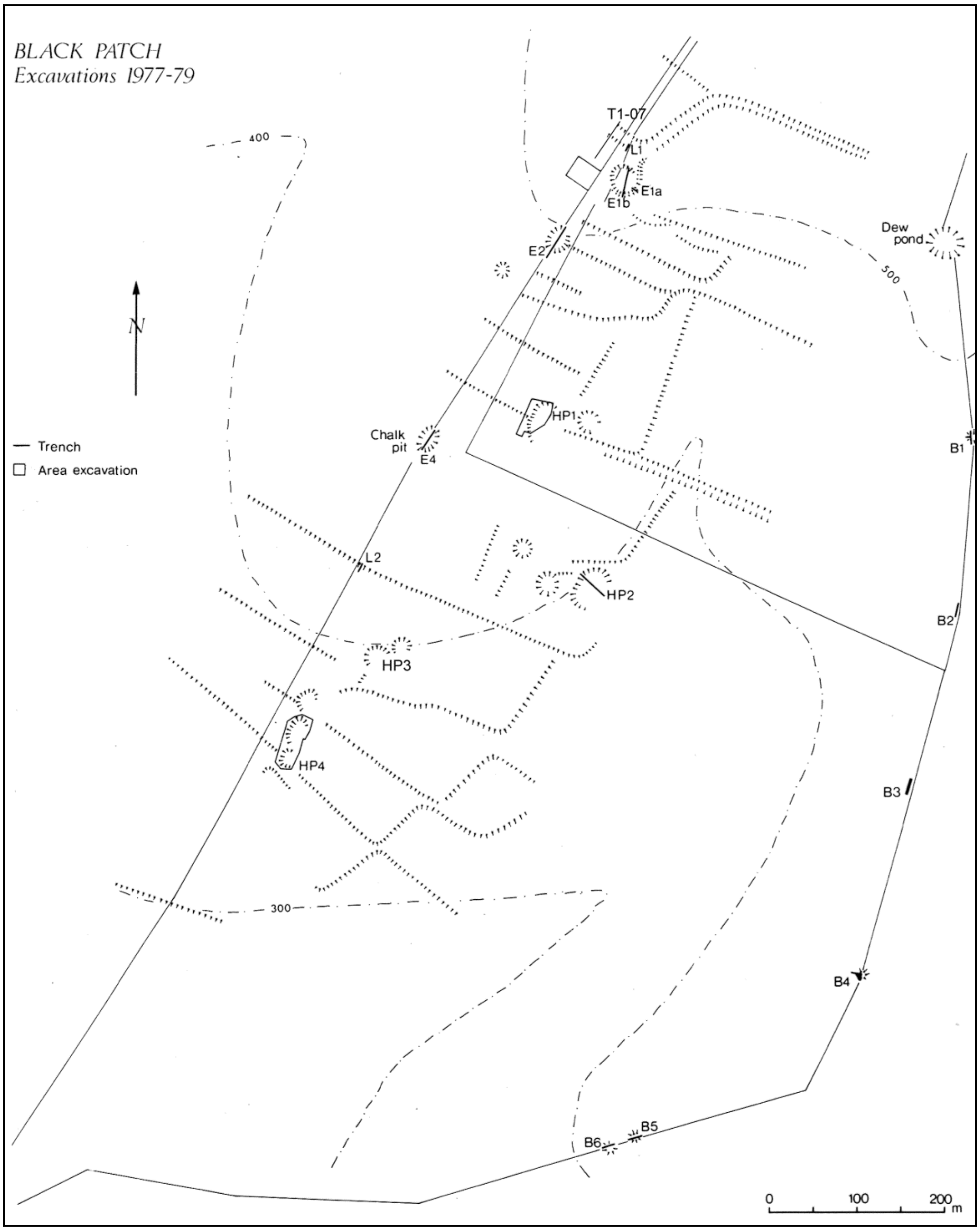


Fig. 5.1 Black Patch excavations 1977-79 showing Hut Platform 3 and T1 -07.
(From Drewett 1982, 324 with additions)

The area surrounding the sites excavated in 1977-79, 2005-6 and 2007 shown in Figure 5.1 are the areas of excavation. The south eastern portion of Hut Platform 3, unexcavated by Drewett, was excavated over two successive summers in 2005-6. A small trench T1-07 was excavated in 2007 and will be examined in Chapter 8.9.3 Results of Survey. Volunteers from the University of Sussex and the Sussex Archaeological Society took part. Field walking and a field survey were also undertaken and these will be discussed in Chapter 8. The Black Patch Landscape.

The main reason for the excavation was to test some of Drewett's interpretations using recent archaeological techniques and it was particularly designed to help answer research question 2.

The key questions for the excavation were:-

1) How would the artefact patterning compare to that on Hut Platform 4?

2) If any shallow depressions, of the sort often described as ponds, were found on the site, would different excavation techniques be able to indicate their usage?

3) What conclusions could be made from the excavation as to use of space on Hut Platform 3?

4) What was the phasing of this platform in relation to other platforms and enclosures? Would it support the idea that each platform/enclosure was used at a different time from every other platform/enclosure?

To answer these questions, chemical soil sampling, micromorphology and magnetic susceptibility were extensively used. To achieve the vertical columns required for micromorphology, the site was excavated using a grid system. The site was divided into 2.5 x 2.5m grids of which only 2 x 2m were excavated, leaving a series of 0.5m baulks running north-south and east-west across the site. In this way, column samples could be taken at relevant points. Having taken sufficient samples in the first year, the second year's excavation was the more usual open area type of excavation, with the exception of one baulk that was extended from the previous year as it ran through the centre of a hut. In addition all finds were plotted in three dimensions by a total station. Plots of different artefact classes will be discussed under the relevant finds section. Figure 5.2 is the excavation plan from the 2005-6 excavation.

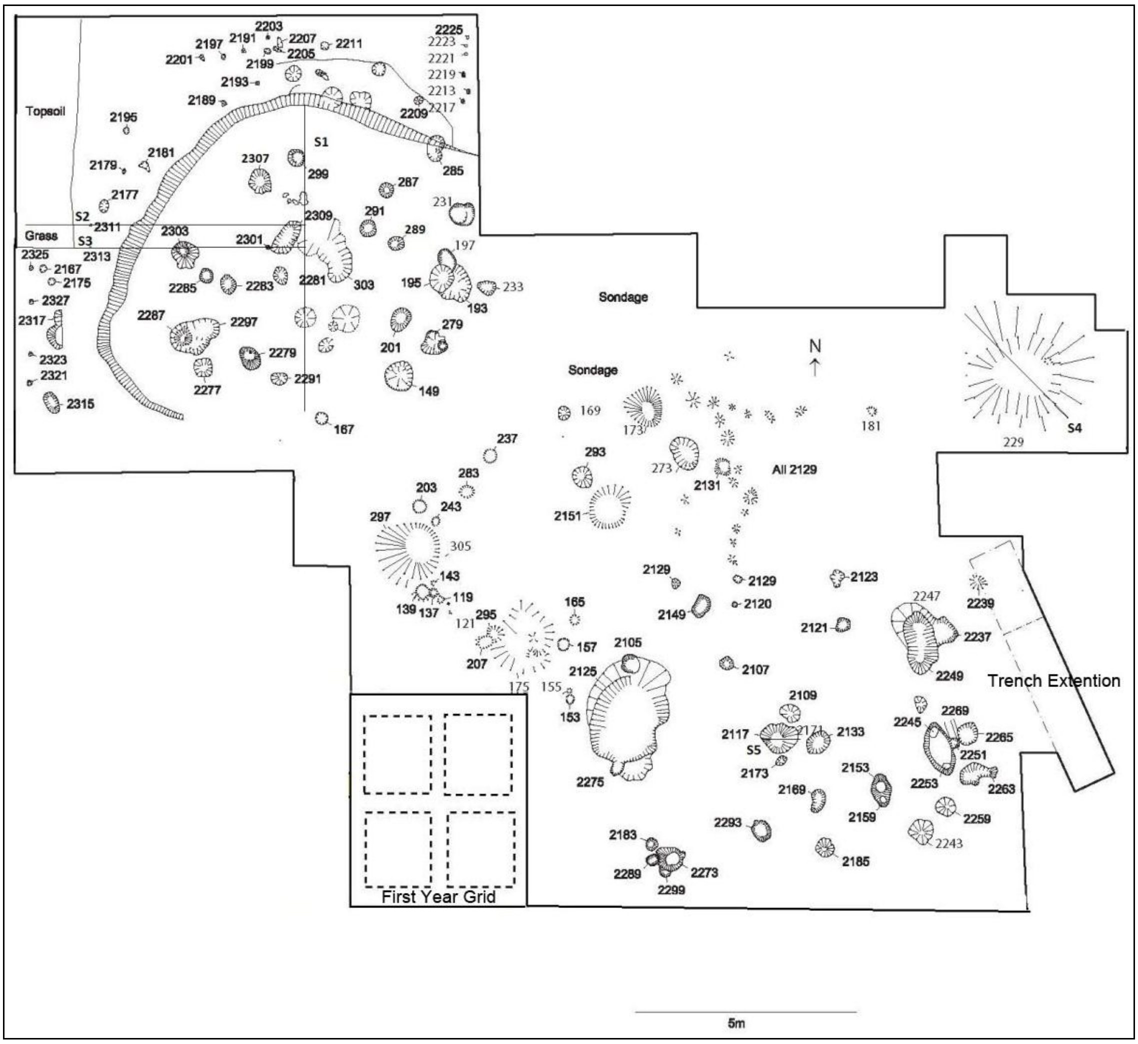


Fig. 5.2 Black Patch Site plan 2005-6

5.2 The Excavation of Hut Platform 3

5.2.1 Introduction

The excavation uncovered what appeared to be three huts, several fence lines, a depression, some rows of stakeholes and unattached pits. The huts were called A, B and C.

5.2.2 Hut A

A semi-circular cutting forming a platform was found on the north-west corner of the site. Two concentric circles of sub-circular postholes were found in this platform and are shown in Figure 5.3. The inner ring was formed from five postholes (contexts 201, 287, 2307, 2285 and 2291). 11 more (contexts 285, 231, 193, 195, 197, 279, 149, 167, 2277, 2287 and 2297) form the remains of an outer postring.

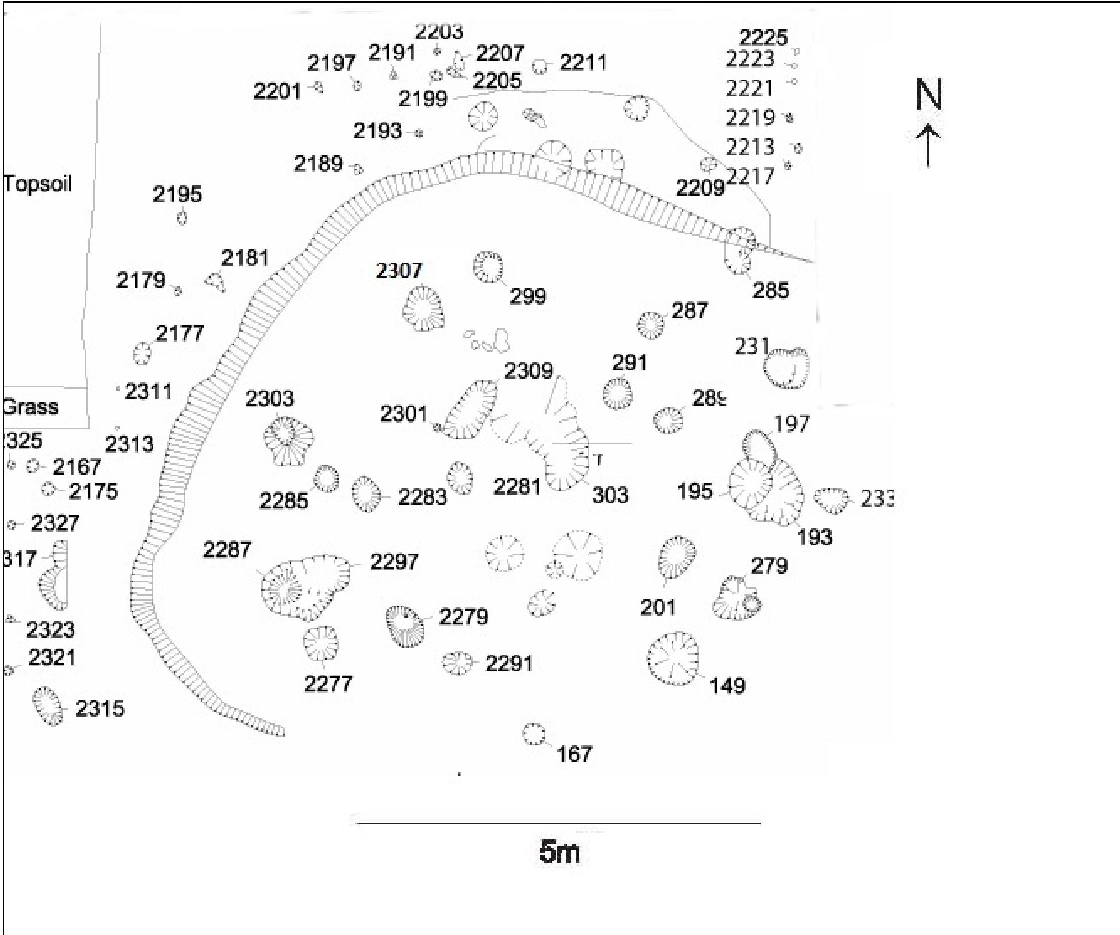


Fig. 5.3 Hut A plan

Depths of proposed constructional postholes in Hut A.

Table 5.1 gives the depths of the postholes in the inner and outer rings of Hut A. The inner ring is 5m in diameter with the posts placed approximately 3m apart. The outer ring is approximately 7.5m in diameter but the posts are not so regularly placed.

Table 5.1 Hut A Posthole. Depths in mm

Inner Ring.

Posthole	201	2285	2307	2291	287
Depth	120	400	330	170	300

Outer Ring.

Posthole	285	231	193	195	197	279	149	167	2277	2287	2297
Depth	280	270	350	270	120	200	200	250	80	400	200

There are also several features on or near the top lip of the terrace which could have been load bearing 2177, 2181, 2189 plus at least three unnumbered contexts to the west and the north of the hut. Six of the outer postholes, 231, 149, 2287/97, 2303 and 299 are placed between 0.1m and 1m in a clockwise position away from the inner post ring possibly a sign of rebuilding. Postholes 193/5/7, 231, 285, 299, 2303, 2287/97 and 279 show signs of recutting. The entrance was probably placed in an east-south-easterly position between the treble posthole 195/7/9 and the double posthole 279. The large number of flints found covering the postholes and the immediate vicinity indicates the possibility of some form of circumference wall. These flints are referred to as architectural and most have been knapped to produce at least one flat side. Most of these postholes contained artefacts. In the outer ring only contexts 231 and 167 did not contain artefacts. Five, 285, 193, 195, 197 and 2277 contained worked flint, one, 279 contained burnt clay and one, 2297 fire-cracked flint. Context 149 contained several sherds of pottery and pieces of fire-cracked flint, together with burnt clay and worked flint. Context 2287 contained fire-cracked flint as well as architectural flint that were possibly part of the wall around the south of the hut. Finally in context 299, three teeth still attached to their maxilla (upper jaw) were found laying on a flat piece of flint (Figure 5.4). It is possible that this was once part of a whole *Bos sp.* skull that had eroded post-deposition. All of the postholes in the inner ring except 2285 contained artefacts. Context 2279 contained worked and fire-cracked flint and 2307 some architectural flint, burnt clay and a piece of sarsen. Context 201 contained several sherds of pottery and some burnt clay, probably part of a loom weight. Context 287 contained two large pieces of flint, one long and cylindrical placed over a flat round one. They resembled a pelvic girdle placed underneath a phallus and pointed to the south-east, see Chapter 6.6 Flint. A radius, belonging to a member of the *Bos sp.* family, had been placed vertically in the centre of the triple posthole 193/5/7, (Figure 5.5). Four internal features contained artefacts, 303 and 2297 had burnt flint and 2283 worked flint. Context 2307 contained two tiers of architectural flint that looked as if they had been deliberately placed to pack the feature.

Fig. 5.4 Part of *Bos* skull in context 299. Scale 10cm

Fig. 5.5 *Bos* radius inserted in triple posthole 193/5/7. Scale 20cm

Fig. 5.6 Section showing the flint layer and covering deposits in Hut A section

Scale 50cm

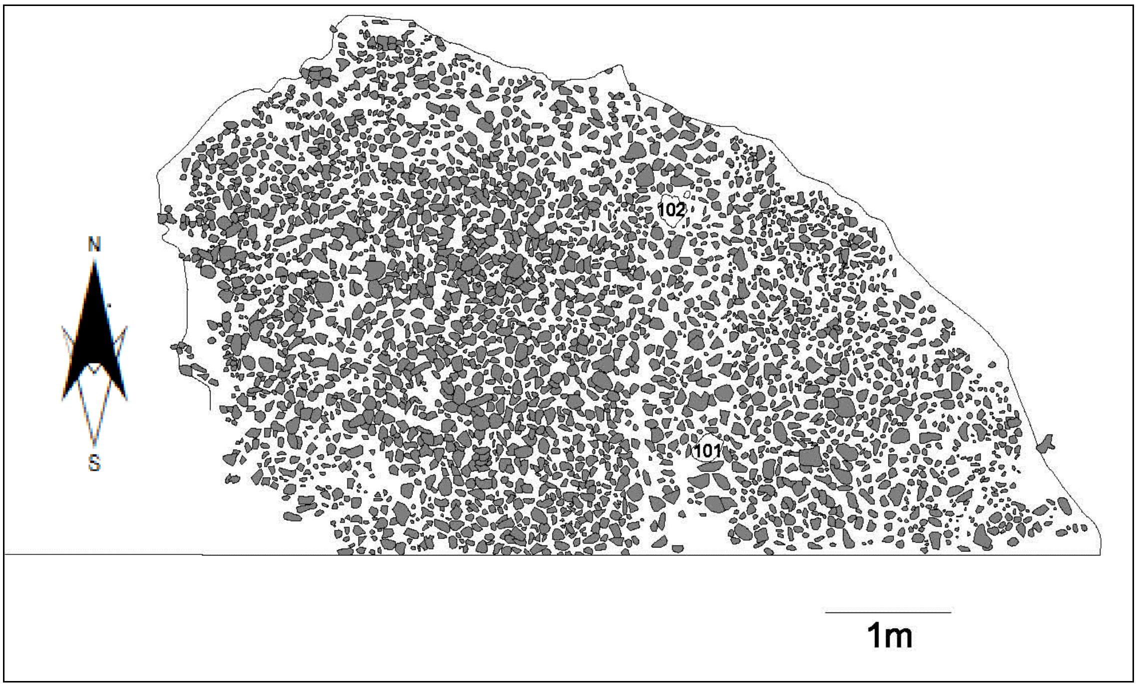


Fig. 5.7 Plan of rear half of Hut A showing flint layer context 223. Scale 1m

As can be seen from the photograph (Figure 5.6), the flints were covered by an orangey-brown layer as much as 300mm deep in places. Figure 5.7, the plan of the flint layer, shows the comprehensive flint covering. In 2005, this whole layer was given the same context number 223 but in 2006 when the back of the hut was excavated, it was given several contexts: 2215, 2216, 2235 and 2271. All four are equivalent to context 223 (Figures 5.8 and 5.9). These layers contained many artefacts.

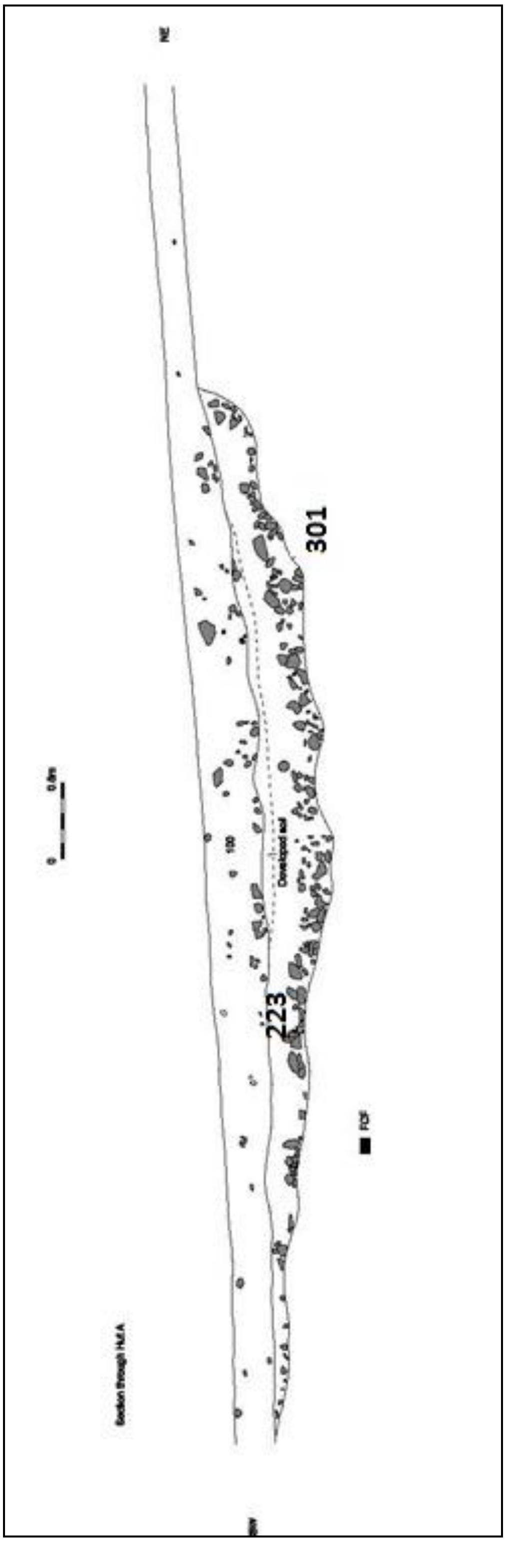


Fig. 5.8 Section 1. East facing section of Hut A. Scale 50cm

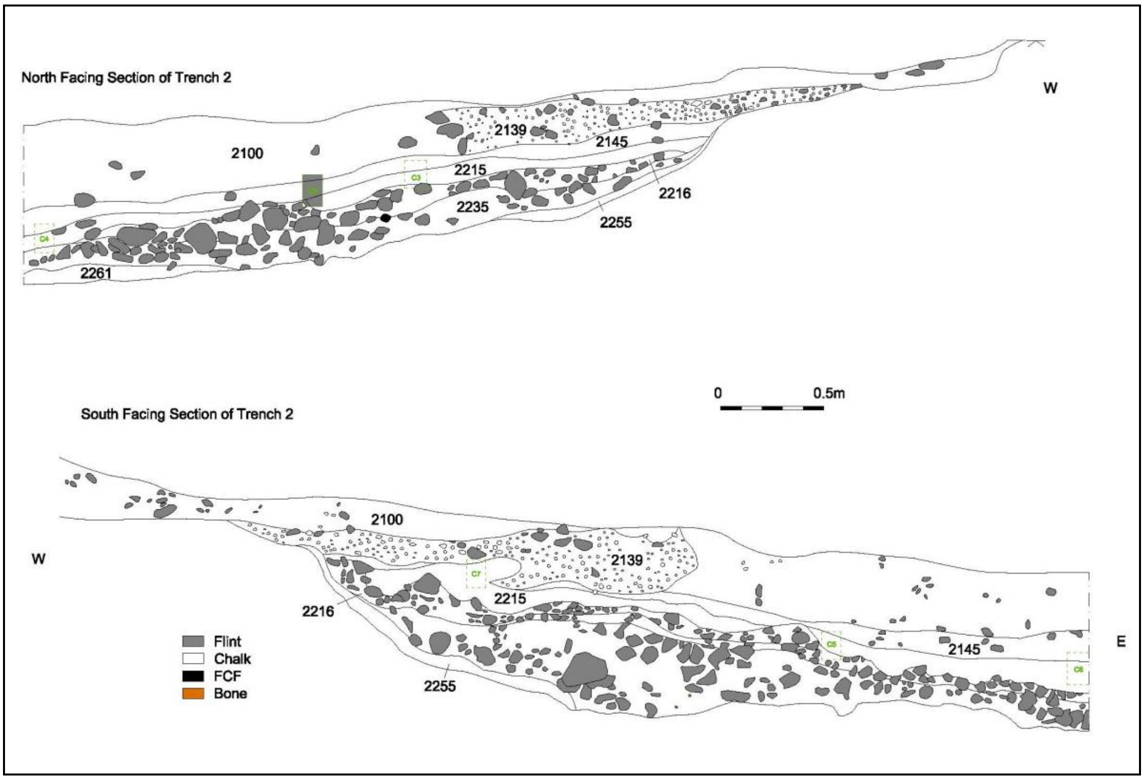


Fig. 5.9 Section 2 and 3. North and South facing sections from the rear half of Hut A

5.2.3 Stakeholes

A small line (three metres in length) of stakeholes 2217, 2213, 2219, 2221, 2223 and 2225 runs northwards from the edge of the terracing and would probably have abutted the hut. An interrupted line of stakeholes 2207, 2211, 2203, 2291, 2197, 2201, 2295, 2275 and 2323, surround the top of the hut terrace at a distance of approximately two metres.

5.2.4 Huts B and C

Unfortunately, deep ploughing had affected the rest of the area excavated making interpretation harder. Figure 5.10 shows Huts B and C. Hut B probably comprises postholes 2151, 293, 237, 203, 139, 207, 295 and 165.

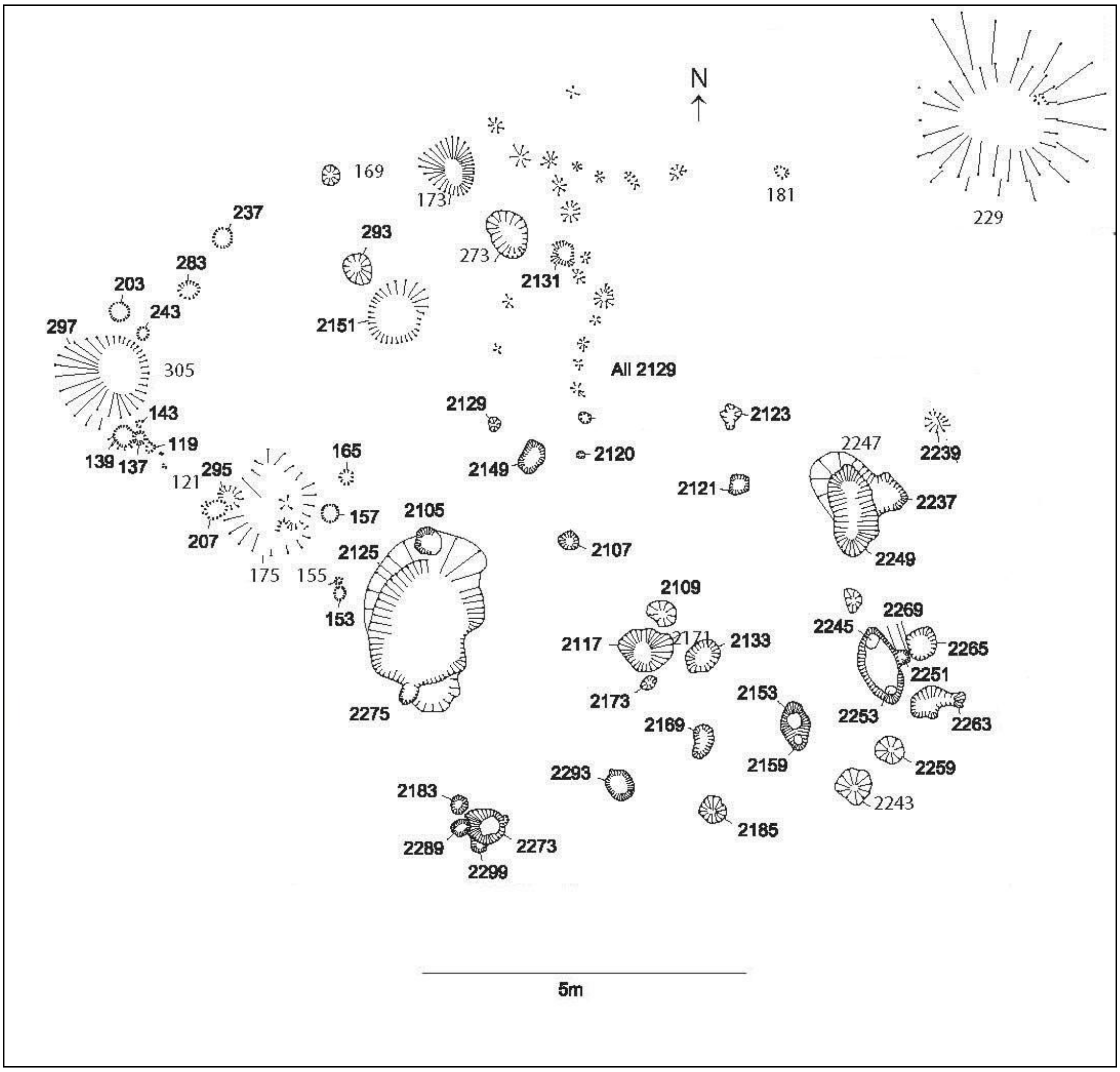


Fig. 5.10 Plan of Huts B (left) and C (right)

Depths of proposed constructional postholes in Hut B.

Table 5.2 gives the depths of the constructional postring in Hut B. It is approximately four and a half metres in diameter.

Table 5.2 Hut B Posthole. Depths in mm

Posthole	2151	293	237	203	139	207	295	165
Depth	100	160	160	260	280	250	200	240

There is probably one further posthole between 165 and 2151 that has disappeared due to erosion. It is difficult to determine an entrance to Hut B but it was probably located in the southeast between contexts 165 and 2151. Hut C is so close that a previous entrance to the southeast has probably been replaced and subsequent entry was made to the south between contexts 157 and 207 where there is an area of worn chalk. This is context 175.

Only three postholes of Hut B contained artefacts. Context 203 contained fire-cracked and worked flint, context 207 burnt clay and worked flint and context 237 pottery, worked flint, burnt clay and fire-cracked flint. The main feature in Hut B was a large pit at the back of the hut context 297. This contained several broken loom weights and pottery sherds, together with worked and fire-cracked flint.

Hut C is much easier to define, being subject to less plough damage. The constructional postholes are 2249, 2123, 2149, 2105, 2275, 2273, 2243 and 2251. Table 5.3 gives the depths of the constructional postholes in Hut C. The postring is approximately eight metres in diameter.

Table 5.3 Hut C Posthole. Depths in mm

Posthole	2249	2123	2149	2105	2275	2273	2243	2251
Depth	360	110	190	300	360	380	400	200

At the back of the hut is a large pit, context 2125, which is bigger but not dissimilar to pit 297. This pit contained several horizontal fills, 2126, 2140, 2142, 2144 and 2146. Each context contained a layer of flints in a different matrix. These matrixes ranged from one similar to that above the collapsed flint in Hut A down to a mixture of larger sized chalk and flint in the bottom layer. All the artefacts found in context 2125 were found towards the south-eastern part of the pit irrespective of depth or context. As postholes 2105 and 2275 cut through it (Figure 5.11), it is possible this is an earlier pit filled in to facilitate the building of Hut C. Two further postholes, 2249 and 2273 have also been dug through existing features. Only three of these postholes contained artefacts: 2149 and 2251 contained fire-cracked flint and 2105 contained pottery, burnt clay and worked flint. Subsequent investigation showed the possibility that 2149 might have been a storage heater and another unrevealed posthole provided roof support. Two central features, the double posthole 2117/2171 and posthole 2133, could have provided central support. They both have a depth of 220 mm. Only 2117 contained any artefacts, these being worked and fire-cracked flint and burnt clay. Four other internal features contained artefacts. Context 2293 contained worked flint, 2173 fire-cracked flint and pottery, 2121 burnt clay, pottery and worked flint and 2153 burnt clay and worked and fire-cracked flint.

Fig. 5.11 Contexts: posthole 2105 cutting pit 2125. Scales 1m and 500mm

5.2.5 Context 229

In the north-eastern corner of the site is context 229, which is a large shallow scoop (Figure 5.12). These scoops have often been described as ponds (Curwen 1937, 190).

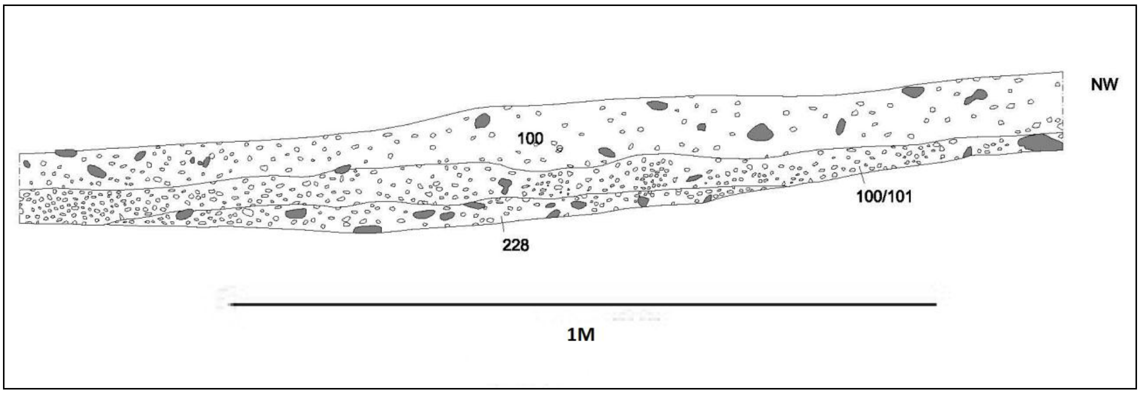


Fig. 5.12 Section 4. Feature 229 NW-SE section. Scale 1m

5.2.6 Fence line

Context 2129, 181 and 2120 seem to make a fence line from Hut C to a point north east of 173 where it makes a very acute turn towards 229. Another branch leaves the original at 2231 and curves back to join Hut C at 2149. As the last hole of context 2129 is only 80mm deep and situated inside Hut C as is context 2120, Hut C might have been built over an existing fence line that carried on to context 2107.

5.3 Black Patch: Soil Science

5.3.1 Introduction

Previous excavations at Black Patch had identified not only artefactual spatial distribution but also two features described as ponds. The following methods were used in an attempt to investigate the existing interpretations and to scrutinize other archaeological data by scientific analysis.

5.3.2 Soil micromorphology

The 13 micromorphological column samples, Table 5.4, were taken and impregnated with a clear polyester resin acetone mixture. Further resin was added, ahead of curing and slabbing for 73 x 50mm thin section manufacture. Thin sections were further polished with size 1,000 grit papers. This work was done by the British Geological Survey at Nottingham. On receipt of the thin sections, they were analysed by the author using a petrological microscope under plane polarized light (PPL), crossed polarized light (XPL), oblique incident light (OIL) and using fluorescent microscopy blue light (BL), at magnifications from x 1 to x 200/400. The thin sections were described and ascribed soil microfabric and microfacies types (Bullock *et al.* 1985; Courty 2001; Macphail and Cruise 2001; Stoops 2003; Goldberg and Macphail 2006).

Table 5.4 shows the location of the samples and conclusion reached for each sample taken.

Table 5.4 Soil micromorphology

Sample Number	Context Number	Context Type	Position Co-ordinates	Conclusion
1	Test	Top Soil	Not Taken	None
2	Test	Top soil	Not Taken	None
3	229	Layer	117.669 213.165 -1.161	Pond
4B	297	Pit	106.124 207.998 -0.818	Midden
4T	297	Pit	106.124 207.998 -0.798	Midden
5B	297	Pit	104.565 207.934 -0.749	Midden
5T	297	Pit	104.565 207.934 -0.709	Midden
6	297	Pit	103.808 207.920 -0.496	Midden
7	297	Pit	105.620 209.544 -0.570	Midden
8	239	Layer	117.62 212.155 -1.406	Pond
9B	223	Layer	101.714 215.391 -0.447	Later Infill of Hut A
9M	223	Layer	101.714 215.391 -0.427	Later Infill of Hut A
9T	223	Layer	101.714 215.391 -0.407	Later Infill of Hut A
10	105	Layer	Not Taken	Floor of Hut A

Key: B=Bottom M=Middle T=Top

5.3.3 Particle size, chemical analysis and magnetic susceptibility

Analysis was undertaken on the fine earth fraction (i.e. < 2 mm) of the samples by Crowther (2008). LOI (loss-on-ignition) was determined by ignition at 375ºC for 16 hours (Ball 1964) – previous experimental studies having shown that there is normally no significant breakdown of carbonate at this temperature; pH (1:2.5, water) was measured using a combination electrode; carbonate content was estimated by observing the reaction when a few drops of 10% HCL are applied (Hodgson 1974); particle size was determined using the pipette method on < 2 mm mineral (peroxide-treated) soil (Avery and Bascomb 1974); and phosphate-P (total phosphate) was measured following oxidation with NaOBr using 1N H_2SO_4 as the extractant (Dick and Tabatabai 1977) – with a slight excess of H_2SO_4 being added initially to neutralise any remaining carbonate.

In addition to χ (low frequency mass-specific magnetic susceptibility), determinations were made of χ_{max} (maximum potential magnetic susceptibility) by subjecting a sample to optimum conditions for susceptibility enhancement in the laboratory. χ_{conv} (fractional conversion), which is expressed as a percentage, is a measure of the extent to which the potential susceptibility has been achieved in the original sample, viz: (χ/χ_{max}) x 100.0 (Tite 1972; Scollar *et al.* 1990). In many respects this is a better indicator of magnetic susceptibility enhancement than raw χ data, particularly in cases where soils have widely differing χ_{max} values (Crowther and Barker 1995; Crowther 2003). χ_{conv} values of $\geq$ 5.00% are often taken as being indicative of some degree of susceptibility enhancement. A Bartington MS2 meter was used for magnetic susceptibility measurements. χ_{max} was achieved by heating samples at 650°C in reducing, followed by oxidising conditions. The method used broadly follows that of Tite and Mullins (1971), except that household flour was mixed with the soils and lids placed on the crucibles to create the reducing environment (Graham and Scollar 1976; Crowther and Barker 1995). This work and the resulting findings were undertaken by Crowther (2008) at the University of Wales, Lampeter. His report and findings are contained in full in Vol 2. Appendix.

In August 2005, a site magnetic susceptibility survey was undertaken by Challands (2005) on the Western part of the site. His report and interpretations are also contained in Vol 2. Appendix.

Further magnetic susceptibility testing of samples from most features was conducted by Stewart, using a Bartington MS2 meter, as part of his postgraduate work at Reading University and is archived.

The results of Crowther's work are shown in Tables 5.5 and 5.6.

Table 5.5 Analysis of Soil Samples

Sample No	**Context**	**Feature**	**LOI[a] (%)**	**Carbonate[b] (est, %)**	**pH[c] (water)**	**Phosphate-P[d] (mg g^{-1})**	**χ (10^{-8} SI)**	**χ_{max}[e] (10^{-8} SI)**	**χ_{conv}[f] (%)**
1	Layer 228/1	Depression 229	**10.9****	2		**0.884***	62.5	1630	3.83
2	Layer 228/2	Below 228/1	**13.3****	1		**1.11***	61.2	1720	3.56
3	Layer 239	Below 228/2	7.36	**10***		**0.988***	54.1	1310	4.13
4	246	Pit 297	6.65	**10****		**0.934***	134	1090	**12.3****
5	250	Pit 297	4.30	**10****		**1.24****	163	**864**[o]	**18.9****
6	252	Pit 297	2.97	**10****		**1.35****	183	**709**[o]	**25.8*****
7	278	Pit 297	**8.67***	**10***		**0.982***	166	1390	**11.9****
8	Layer 223	Hut floor?	**9.95***	**0.1**[o]	**7.4***	**0.873***	49.0	1800	2.72
9	Fill of 2105[g]	Posthole	**11.9****	**10***		0.778	67.7	1140	**5.94***
10	2126	Pit 2125	**10.3****	2		0.712	79.7	1660	4.80
11	2140	Pit 2125	**9.31***	2		0.716	87.6	1670	**5.25***
12	2142	Pit 2125	**7.97***	5		0.706	92.0	1610	**5.71***
13	2144	Pit 2125	**8.17***	5		0.743	96.1	1590	**6.04***
14	2146	Pit 2125	7.21	**10***		0.754	98.1	1430	**6.86***
15	Fill of 2153	Posthole	**10.9****	5		0.643	61.0	1510	4.04
16	Fill of 2237	Posthole	3.92	**10****		**1.03****	158	**445**[o]	**35.5*****
17	Fill of 2183	Posthole	5.66	**10****		0.509	38.8	1250	3.10
18	105	Layer	**8.13***	**10****		0.789	46.2	1370	3.37

Sample No	Context	Feature	LOI[a] (%)	Carbonate[b] (est, %)	pH[c] (water)	Phosphate-P[d] (mg g^{-1})	χ (10^{-8} SI)	χ_{max}[e] (10^{-8} SI)	χ_{conv}[f] (%)
19	Fill of 299	Posthole	6.00	0.5		**0.821***	50.5	1710	2.95
20	Pit 2	Valley bottom	**7.69***	**10***	8.0	0.556	28.9	1370	2.11
21	Pit 2	Valley bottom	4.98	0.5	7.7	0.782	31.6	1710	1.85
22	Pit1	Valley bottom	7.01	0.5	7.8	0.558	56.6	1700	3.33
23	Pit1	Valley bottom	3.60	1	8.1	0.636	52.1	**2160***	2.41
24	Pit 3	Valley bottom	1.89	0.5	8.1	0.433	17.5	1020	1.72
25	Pit 3	Valley bottom	2.84	0.5	8.0	0.527	31.5	**2360***	1.33
26	Lynchet	Lynchet	**8.76***	**10***	8.0	0.759	45.9	1470	3.12

[a] **Loss-on-ignition:** Figures highlighted in bold have notably higher LOI values: * = 7.50–9.99%, ** = 10.0–14.9% – see also footnoteg

[b] **Carbonate:** Extreme figures are highlighted in bold: o = non-calcareous, * = ‘very calcareous’ (i.e. recorded as 10), 10** = ‘very calcareous’, extremely high carbonate content

[c] **pH:** Figure highlighted in bold indicates a notably lower pH

[d] **Phosphate-P:** Figures highlighted in bold show possible signs of weak phosphate-P enrichment (≥ 0.800 mg g-1): * = possible enrichment, ** = more likely enrichment (LOI < 5.00%) – see text

[e] **χ_{max}:** Low and high figures are highlighted in bold: o = low, * = high

[f] **χ_{conv}:** Figures highlighted in bold show signs of magnetic susceptibility enhancement: * = enhanced (5.00–9.99%), ** = strongly enhanced (10.0–19.9%), *** = very strongly enhanced (20.0–39.9%)

[g] **Fill of 2105:** This sample appeared to contain much partially burnt wood, which will have contributed to its relatively high LOI.

Table 5.6 Particle size analysis of selected samples

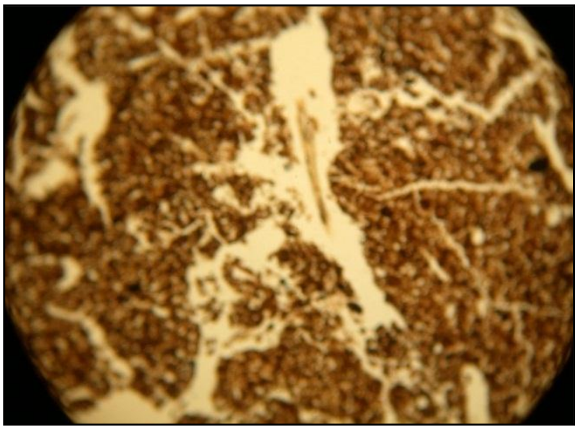
Sample No	Context	Feature	Coarse sand 600 µm - 2.0 mm (%)	Medium sand 200-600 µm (%)	Fine sand 60-200 µm (%)	Silt 2-60 µm (%)	Clay <2 µm (%)	Texture class
8	Layer 223	Hut floor	0.6	0.8	4.6	64.9	29.2	Silty clay loam
25	Test Pit 3	Valley bottom	0.9	0.9	3.9	55.4	38.8	Silty clay

5.3.4 Micro-artefact distribution

Micro-artefact distribution analysis was also carried out by Stewart (2007) as part of his B.A. work. Unfortunately, the only substance identifiable in the samples taken from across the site was charcoal, which was ubiquitous.

5.3.5 The results of the investigations

Three bulk samples (numbers 1, 2 and 3) and two soil columns (numbers 3 and 8) were taken from the pond feature 229. The two thin sections (slides 3 and 8 (Figure 5.13) taken at magnification x 100) both show dusty clay coatings and laminated voids indicative of illuviation and compaction by trampling of animals and/or creation of puddling. The absence of vesicules further implies containment of water rather than sudden drying out (Crowther and Macphail 1989, 8 and 136). Descriptions of these slides, as well as photographs, are archived.



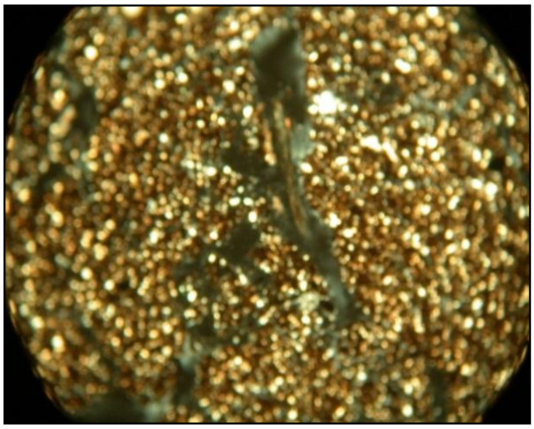
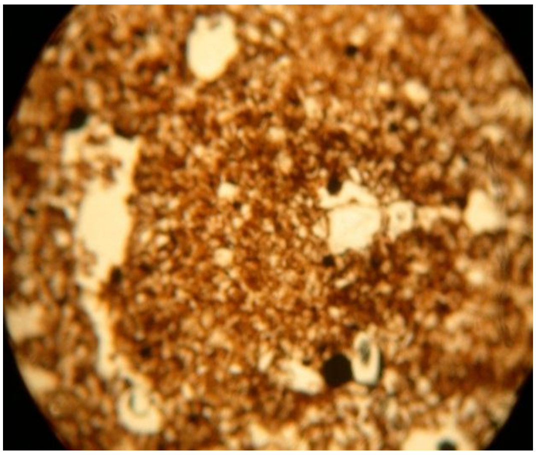


Fig. 5.13 Slide of micromorphological sample 8. 100 x Magnification Left: in plane polarised light (PPL) Right: crossed polarized light (XPL)

The high level of organic matter (bulk samples 1 and 2) is possibly the result of water-logging, whilst the high phosphate levels in all three of the samples (bulk samples 1, 2 and 3) suggest animal enrichment (Crowther 2008, 2-6). Together with evidence from the micromorphological slides 3 and 8 of dusty clay coatings and signs of laminated horizontal planar voids would indicate feature 229 as having been used as a pond. However, most pond remains on Later Bronze Age sites on the Downs are larger in size than feature 229 (Peter Drewett pers. comm.) but the flint capping above the feature was 3m greater in diameter, suggesting the original feature was larger.



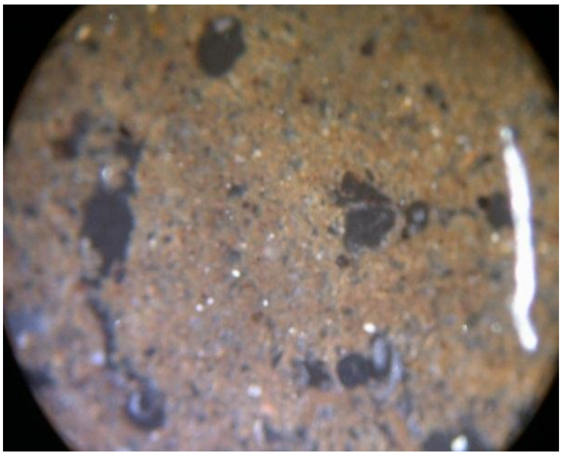


Fig. 5.14 Slide of micromorphological sample 9 bottom. 100 x Magnification   Left: in plane polarised light (PPL) Right: in oblique incident light (OIL)

Although many bulk samples were taken from layer 223 (infill of Hut A) and its equivalent layers in Hut A (see micro-artefact patterning above), only one from the centre of the 'floor' was analysed. However three thin sections were taken (9 Top, 9 Middle and 9 Bottom, Figure 5.14), as their names suggest, they form a column down through context 223. Descriptions of these slides, as well as photographs, are contained in Vol 2. Appendix. The increasing ped size as you go vertically down into the layer and the horizontal cracking, indicates a beaten or trampled floor (Richard Macphail pers. comm.)

Micromorphological slide 9 Bottom shows the fabric is a total excrement fabric, similar to those found in farmyards today. The coarse anthropogenic inclusions, plant material, charcoal, burnt and unburnt flint, burnt daub and bone suggest it was a work area. Chemical analysis concurs with the description of total excrement fabric by recording a high loss on ignition (a test for organic matter) and relatively high phosphate content. The carbonate content of layer 223 is virtually zero, agreeing with the micromorphological evidence of calcium depletion, which showed that at least some depletion took place *in situ* .This layer was the only sampled context to have a neutral rather than an alkaline pH and particle size analysis confirmed that the layer was a silty clay loam in keeping with an Aeolian deposition of loess.

Whilst the sample of layer 223 had a relatively low magnetic susceptibility, Challands' (2005) survey and other magnetic susceptibility readings show not only great variation but also some quite high readings indicative of varying activities across the area in and around Hut A (Figure 5.15). This layer has been designated as an outdoor activity area on the basis of the layering of the contexts above the hut floor, with soil having been either washed in or brought in by humans and animals after Hut A had been demolished. It should be noted that the evidence from the micromorphology or chemical testing gives no input into whether the area was partially covered or uncovered. However magnetic susceptibility readings and the interpretation at the time of excavation both suggest that outer postholes 149 and 167 show signs of burning. Magnetic susceptibility readings also suggested a possible hearth in the centre of the hut where a shallow feature 303 was subsequently found in the chalk, as well as evidence of burning in posthole 291 and just behind the treble posthole 193/5/7.

A micromorphological thin section of the chalk (context 105) below context 223 and the flint level were taken (no. 10), together with a bulk sample (no. 8). This thin section showed dusty clay coatings, horizontal lamination and large vughes, whilst the only chemical features were slightly high organic and phosphate levels. All these indications lead to what would be expected of the chalk floor level at the bottom of the hut when it was still standing and on which the inhabitants partook of their daily activities.

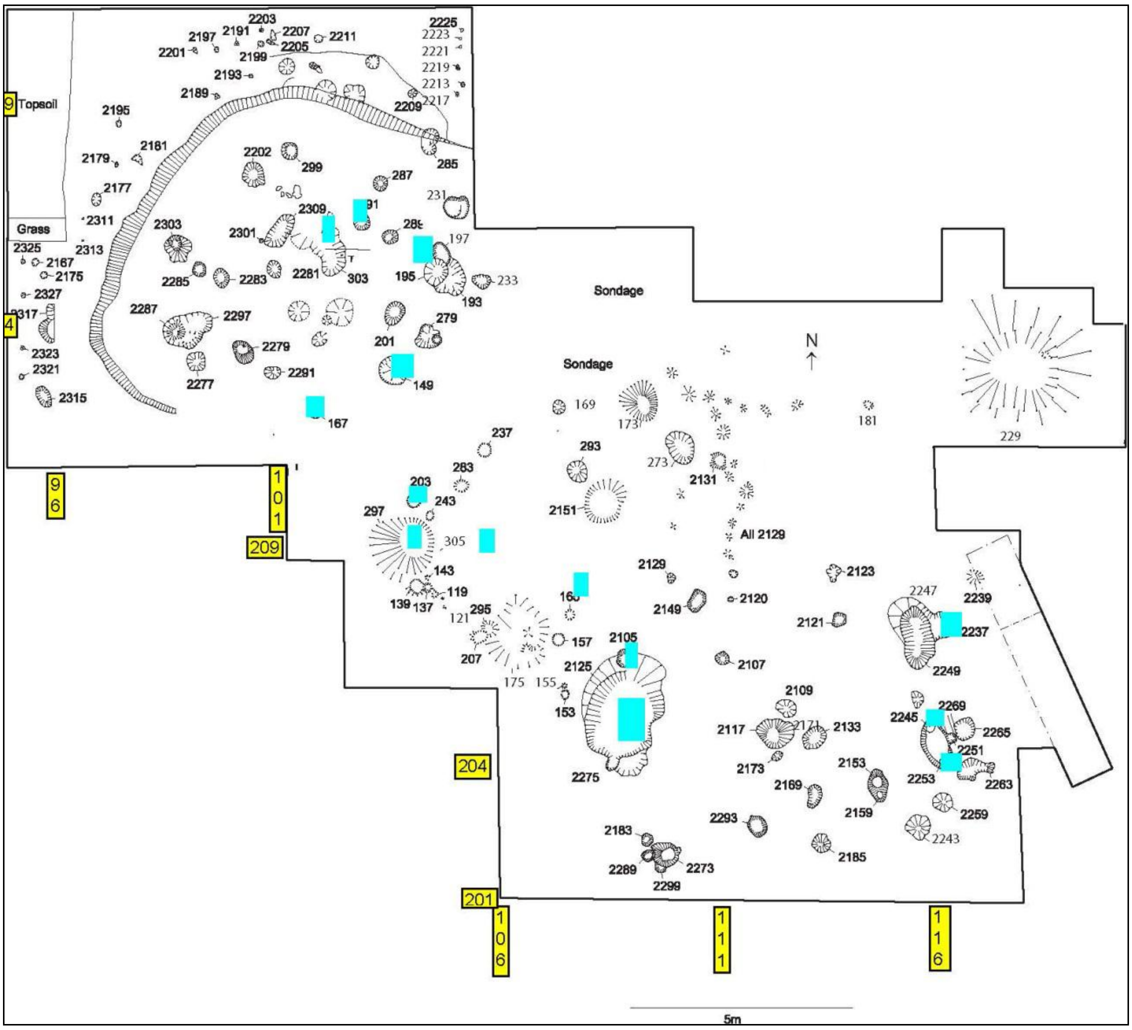
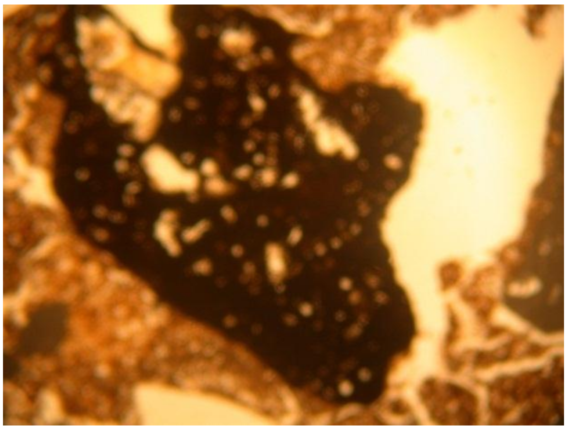


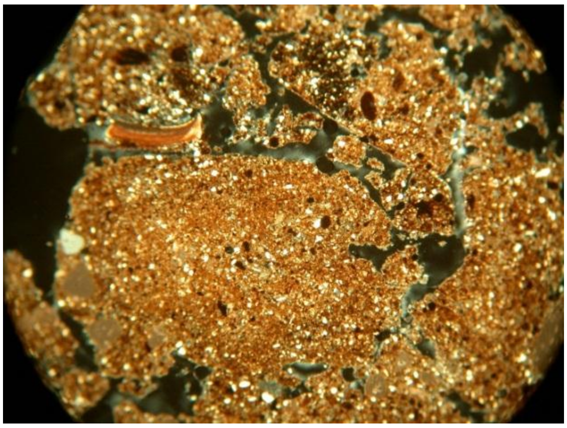
Fig. 5.15 Site Plan Showing Areas of Magnetic Susceptibility (marked in blue) greater than 90 10^{-8} SI. Grid positions marked in yellow

The last feature to be analysed by micromorphological thin section was pit 297. Six micromorphological thin sections (nos. 4, 5 Top, 5 middle, 5 Bottom, 6 and 7) were taken as well as four bulk samples (nos. 4-7). The bulk samples were taken from as near to their corresponding thin section sample as was possible:- Thin section 4-bulk sample 7; thin sections 5B, M and T –bulk sample 6; thin section 6-bulk sample 4; thin section 7-bulk sample 5.

There is a great deal of evidence (Figure 5.16) to indicate that this feature was a midden, not only macro artefacts, worked and fire-cracked flint, burnt clay, a little pottery, shell and animal bone but also micro-artefacts worked and fire-cracked flint, bone, decaying plant matter, animal bone and shell evident in the micromorphological slides (Figure

5.16). There are large amounts of charcoal at both macro and microscopic level. The contents of the pit are clearly stratified. The chalk peds are mostly unsorted (there is only a degree of sorting at the bottom of the pit), indicative of the fill being scooped in with a spade type implement.





Slide 5 Middle **Slide 5 Top**

Fig. 5.16 Contents of pit 297. Left: micromorphological sample 5 Middle shows burnt daub 100 x magnification in plane polarised light (PPL). Right: micromorphological sample 5 Top shows decayed vegetable matter faecal remains and burnt flint 200 x magnification in oblique incident light (OIL)

There is also evidence of herbivore dung; phosphate staining and calcite depletion in the slides, suggesting this pit was used to collect dung. The chemical evidence gives a lower than expected phosphate reading for a midden. However, the large amount of calcium carbonate in the sample probably accounts for this lower than expected level. The phosphate levels found are commensurate with dung rather than with bone and the levels for fractional conversion magnetic susceptibility suggest a degree of burning of the contents either *in situ* or from fills which have been burnt elsewhere. Given the shape of the feature and its situation in association with the sort of structure often described as an animal hut, it is unlikely the burning was *in situ.* Micromorphological and chemical evidence point to this pit containing dung and its location would seem to confirm this use.

A slightly larger pit at the back of Hut C was also chemically tested. Unfortunately, the dense flint packing made micromorphology impossible. This pit 2125 had a higher level of loss on ignition than 297 but also a very low carbonate reading except for the lowest layer of the fill 2146 which had levels nearer pit 297. However, the lower phosphate levels and less enhanced magnetic susceptibility suggest a different use for pit 2125. The packed contents of the flint throughout the context and its positioning within Hut C, with one of Hut C's constructional postholes 2105 (Figure 5.11) cutting the feature, suggest it had been filled in to take this post. It is possible, given the chemical evidence from the lowest fill of the pit that it was used for the collection of dung before it was backfilled but this in itself is not sufficient evidence.

2105 was also chemically tested and found to have not only a high loss on ignition but also a high calcium carbonate level and an enhanced fractional converted magnetic susceptibility level similar to those from pit 2125 through which it is cut. There are many pieces of partially burnt wood in this sample which would have contributed to its loss on ignition reading.

Three other postholes from Hut C were tested, 2153 in the centre of the hut, 2237 in the entrance porch and 2183 a small posthole on the periphery of the hut on the left hand side. They all showed a reciprocal relationship between carbonate content and loss on ignition. 2237 also had high phosphate enrichment and a very high suite of magnetic susceptibility readings.

One posthole from Hut A was examined 299. This is the posthole that contained the bovine maxilla. Its readings are all unremarkable with the exception of the phosphate level which might reflect the deposition of bone in the context.

As well as the features mentioned above, high magnetic susceptibility readings were noted in posthole 203, two small areas in Hut B and three areas around the entranceway to Hut C.

5.3.6 Discussion

The final construction of Hut A appears to be similar to Hut 4 on Hut Platform 4 at Black Patch (Drewett 1982, Fig. 12, 338). Both have evidence of load bearing posts on the upper lip of the terrace and large amounts of flint spread over the hut floor, indicating the presence of load bearing walls. Hut 4 is of single postring construction with the rear of the terrace and flint wall used as supports. Many of the postholes in the outer postring of Hut A show signs of recutting. These are contexts 285, 231, 193/5/7, 279 and 2287/2297. All are at the front of the house indicating any further support would have come from posts in postholes on the terrace, possibly 2177 and 2181 plus others no longer existing. The approximately circular line of stakeholes that runs around the top of the terracing are situated two metres from the edge of the terrace and are therefore too far from the centre of the hut to be load bearing. The existence of terrace postholes, inner and outer postrings, plus a flint wall suggest rebuilding. The outer postring appears to be part of an original single postring building similar to Structure 1 Area A at Downsview and Structure C at Itford Hill (Bareham 2002, Fig. 7.23, 165; Burstow and Holleyman 1956, Fig. 192-3). This construction was replaced by a structure similar to Hut 4 at Black Patch. The substantial layer of architectural flint found directly above the hut floor indicates that the flint wall was part of the last construction phase of the house. After its active life, when the remains of the flint wall either tumbled or were pushed into the hollow formerly occupied by the house, there is evidence of continued use of this area. Soil, very similar in nature to modern farmyard soil, was trampled in on the feet of humans and animals accumulating a depth of as much as 0.5m. This soil is very similar to the loess based colluvium at the bottom of the valley, indicating that the area was used at the same time as the agricultural phase associated with the colluvium. It contained many artefacts which will be discussed in detail (Chapter 6. Artefacts). Hut A is also associated with what appear to be votive offerings. These will also be discussed in Chapter 6.

Hut B is smaller than Huts A and C, is placed between them and was probably the ancillary building to both at different times. The presence of a midden would imply use as an animal shed. It is slightly irregular in shape and an entranceway in the south-eastern quadrant would seem impossible as that is where Hut C is placed. It is unlikely that Hut C predates Hut B as the latter could well be placed further north if it was a later building to maintain a southern or south-easterly entrance vista. This would imply that Hut C was a replacement for Hut A when for some reason it was no longer useful or safe. Hut C is of similar construction to the original Hut A and of similar size. It may have had a central support double posthole 2117/2171. This is discussed in detail in the section on fire-cracked flint (Chapter 6.3). There is a pit 2125 at the back of the hut which is cut by two postholes 2105 and 2275, indicating the possibility that the pit was filled in to accommodate the later hut. The uppermost fill of pit 2125 is similar to that covering Hut A so it is possible that the area above Hut C was also used after it went out of commission. It is hard to believe that Hut A is later than Hut C given its positioning. It would have required the cutting of the terrace, which continues to the north-east to form the second part of the platform. There are other places where it could have been built without this chore. The north-eastern part of the hut platform was subjected to test-pitting but no relevant information was forthcoming (data archived). The partnership of a major and ancillary hut with a small pond conforms to Ellison's model of Middle Bronze Age settlement (Ellison 1981).

The complete re-build of Hut A and its probable subsequent replacement by Hut C would give the site an age range of between 45-75 years based on Drewett's (1982, 343) assumption of earthfast posts surviving between 15 and 25 years. A more scientific approach was taken by Wainwright and Longworth (1971, 224-5) who looked at the decay rate of oak posts. The size of the posts was based on the diameter of postpipes excavated on Later Bronze Age roundhouses. They suggest that the average survival time was between 30 and 75 years extending that period to between 90-225 years. Brück however agrees with Rahtz and ApSimon (1962, 303-40) who age roundhouses from a small number of decades to 50 or 100 years (Brück 1997, 162). On current thinking this would seem to put the age of the site at probably 100 years if not more. Given this is only half the space delineated for Hut platform 3 it is possible the hut platform was continually (given the proposed building schedule) occupied for at least 200 years, indicating a centralised authority for inheritance and land allocation. This central authority may have changed over time. The limited use of space in the planning of the site and its internal formality with the use of fences shows both organization and discipline. Whether this is social, ritual or just comforting is hard to define. For whatever reason there appears to be a desire to encroach as little as possible on agricultural land. Possibly this, together with the collection of manure implies a wish to maximise production again showing organization discipline and external overseeing.

5.3.7 Conclusion

The rebuilding and subsequent decommissioning of Hut A and plough damage across the lower half of the site has made discernment of artefact patterning difficult to compare to that on Hut platform 4 but there are sealed contexts below the flint cover in Hut A and the later use of the space to investigate.

There is strong evidence that the depression investigated was a pond, fulfilling the second of the questions raised at the start of this Chapter.

The size scope and design of the buildings concurs with Ellison's view that these sites are occupied by a family unit with one main unit and one animal shelter. The close internal proximity of the complex is of interest. The building of Hut C so close to Hut B obscuring its view to the southeast either shows the premium put on land or some form of social compulsion. This indicates a central authority that controls land apportionment. At a site level this is reflected in the existence of fencing showing the wish to control free passage around the huts for either people or animals.

This site would appear to have been occupied for some considerable time making it more likely that some of the hut platforms were occupied contemporaneously.

The probable positive identification of a pond feature and the collection of dung on site indicates a farming way of life suggesting social interaction with other groups for animal breeding and possible trading of crops. These crops would appear to be grown intensively, implying an end market outside of the immediate group. The large amount of what would appear to be ritualistic depositions and evidence from both Hut A and Hut C that some postholes associated with entranceways have high magnetic susceptibility readings, indicating that they have been burnt. Most of these depositions would appear to be related to fertility although given that the majority of postholes in Hut A contain artefacts they could also represent closing deposits.

Chapter 6. Artefacts

6.1 Introduction

This chapter examines the corpus of data for each artefact category collected at Black Patch in 2005-6, not only as to typology but also as to three dimensional location, to ascertain what activities were carried out. It then examines whether activity areas can be differentiated from deliberate deposition of these artefacts after use, either as rubbish or ritual. It also asks what information on the culture and lifestyle can be obtained from this data? Lastly, it compares this information with data from other sites. This information will be used to answer the three remaining research questions from the previous chapter – how the artefact patterning compared to that on Hut Platform 4, what conclusions could be made from the excavation as to use of space on Hut Platform 3 and what was the phasing of this platform in relation to other platforms and enclosures? Would it support the idea that each platform/enclosure was used at a different time from every other platform/enclosure?

All categorization of artefacts was done by the author with the exception of the flints which were done by Haken (2007) (Vol 2. Appendix).

Information from other sites was taken from site reports and archived data.

6.2 Flint

6.2.1 Introduction

This section will start with a brief synopsis of the full report and a general discussion of the flint from the Black Patch 2005-6 excavations. This will be followed by an analysis of flint distributions across Downland sites.

There will then be a comparison of those sites where modern flint analysis is available. The section will close with conclusions from the above analysis.

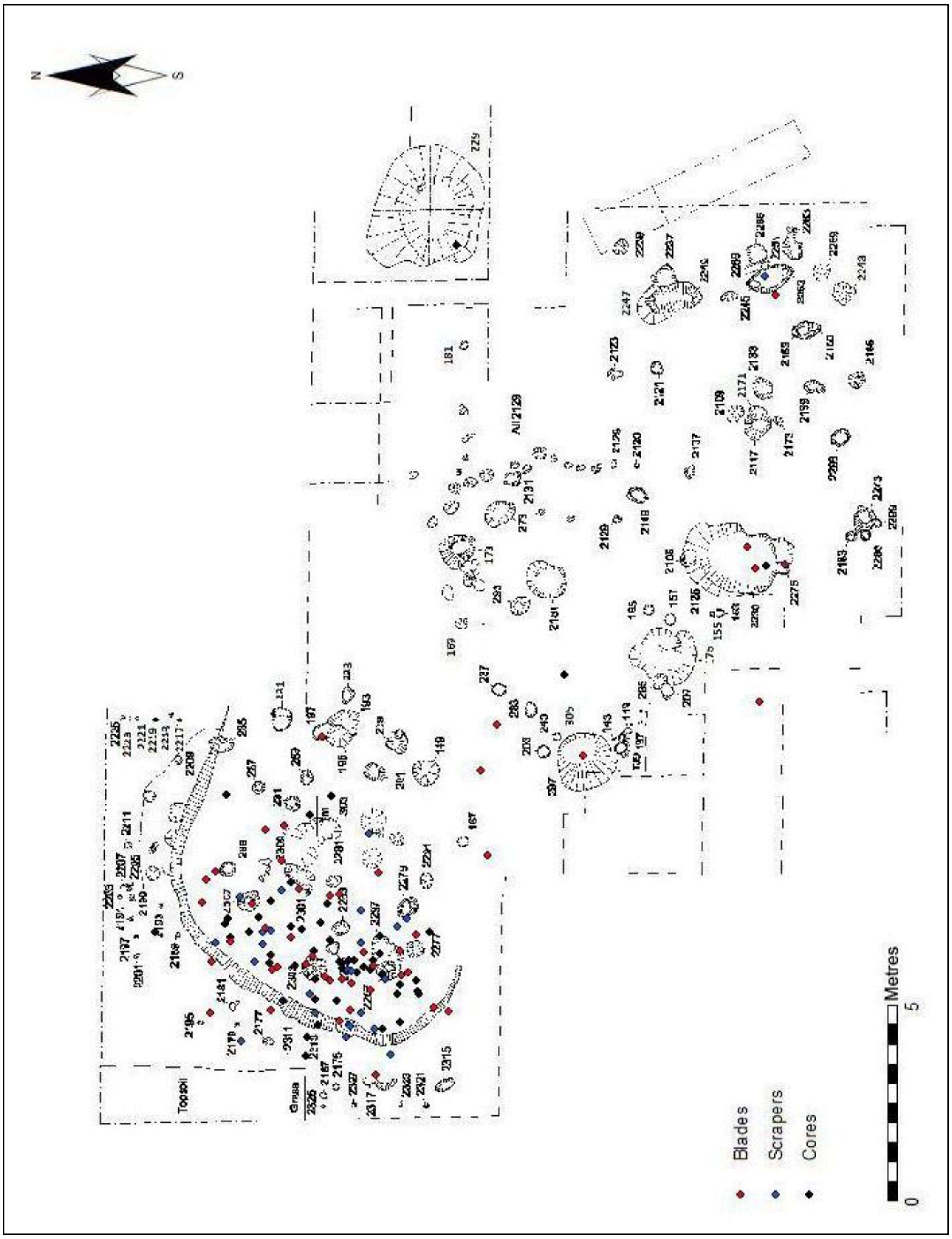
6.2.2 Black Patch 2005-6

The majority of the worked flint from the 2005-6 excavations comes from the levels above the flint layer in Hut A, particularly contexts 2215, 2216 and 2235, at the back of the hut platform. The flint is evenly spread out with some bias to the upslope (northern side of the hut) as might be expected if the depression caused by the hut platform was acting as a gravitational trap for flint moving downhill under the influence of gravity. (Figures 6.1 and 6.2).

Fig. 6.1 Flint distribution across entire site showing concentration in Hut A

Further evidence of intrusion comes from the 26 Mesolithic and Neolithic pieces. These are mostly found (15) in the contexts above the flint layer in Hut A. There is no discrimination between age and depth or position. The remainder of the earlier flint work is spread over the rest of the site in the plough soil or in levels just below it. There is one piece below the flint tumble, which is a Late Neolithic-Early Bronze Age knife

Fig. 6.2 The location of flint blades, scrapers and core



found in association with the fire-cracked flint and pottery on the hut floor context 2271.

There is very little worked flint in Huts B and C other than in features, as can be seen from Figure 6.1 a site plan of flint finds. The huts seem to have been either cleared out during or after use or plough damage has removed material. There is juxtaposition between the numbers of constructional postholes and internal features containing flint. In Hut A, eight constructional postholes contain flint but only one internal feature, whereas, in Hut C only one constructional feature contained flint but five internal features did. Six of the constructional postholes in Hut A containing flint are in the outer postring.

Although there is a large amount of struck flint in the work area above the flint tumble in Hut A, there is little as either small flakes or hammer stones, implying this was not an area where much knapping took place. In fact only two hammer stones were found, in contrast to field walking the surrounding area where there were over 50 unutilised but perfectly acceptable artefacts that could have been used as hammer stones. However 40 of the 57 multi-faced cores were found inside the hut mostly to the rear and centre as were the majority of the blades and scrapers.

Although the overall distribution shown in Figures 6.1 and 6.2 are quite similar, the majority of the scrapers, blades and cores are at the back (western side of the hut) and in the middle of Hut A. If the majority were not *in situ*, they would have been more in the northern part of the hut as the land falls from the north to south. The overall flint pattern shows a regular distribution across the hut showing some of the flints were in position as a result of natural deposition.

The micro-artefact analysis showed a lack of small flint flakes. This added to the evidence that initial knapping and core reduction were executed outside, probably where the flint was found, whilst the finer knapping took place elsewhere on site. This could also be the reason for the lack of finds of flint on the floor areas of all three huts.

A large number of flints appeared to have been shaped or partially shaped in the manner of bricks, allowing them to be laid or packed together tightly. These are referred to as ‘architectural flint’. Each flint had at least one shaped flat side. Those found in features and a sample of the rest were examined by Haken (2007). He confirmed that these were worked. The large number of such flints lying over Hut A gives more credibility to the theory that at least part of the base of the hut was flint walled, similar worked flints were also used as packing stones in postholes.

One feature, 2307, contained two layers of neatly packed flints and nothing else, other than one small piece of type 2 pottery. The flints had obviously been packed there for a purpose although the usage of this feature is unclear. It was possibly used as a drain. There is no sign of burning and the feature had a low magnetic susceptibility reading.

Seven piercers of Late Bronze Age date were found, as opposed to none in the 1977-9 Black Patch excavations when only a bronze awl was found. Fieldwalking by Butler (2001, 215-223) at Rathfinny Farm two kilometres south of Black Patch found 12 piercers. Two horned scrapers (Figure 6.3) were found in the 2005-6 excavations. These are rare and their distribution seems to be restricted to the Seaford/Alfriston area. 14 similar scrapers were found at Rathfinny Farm. Horned scrapers have been found at Hellingly (Seager Thomas 2004). Both of these sites are close to the Cuckmere River suggesting contact/travel along the river.

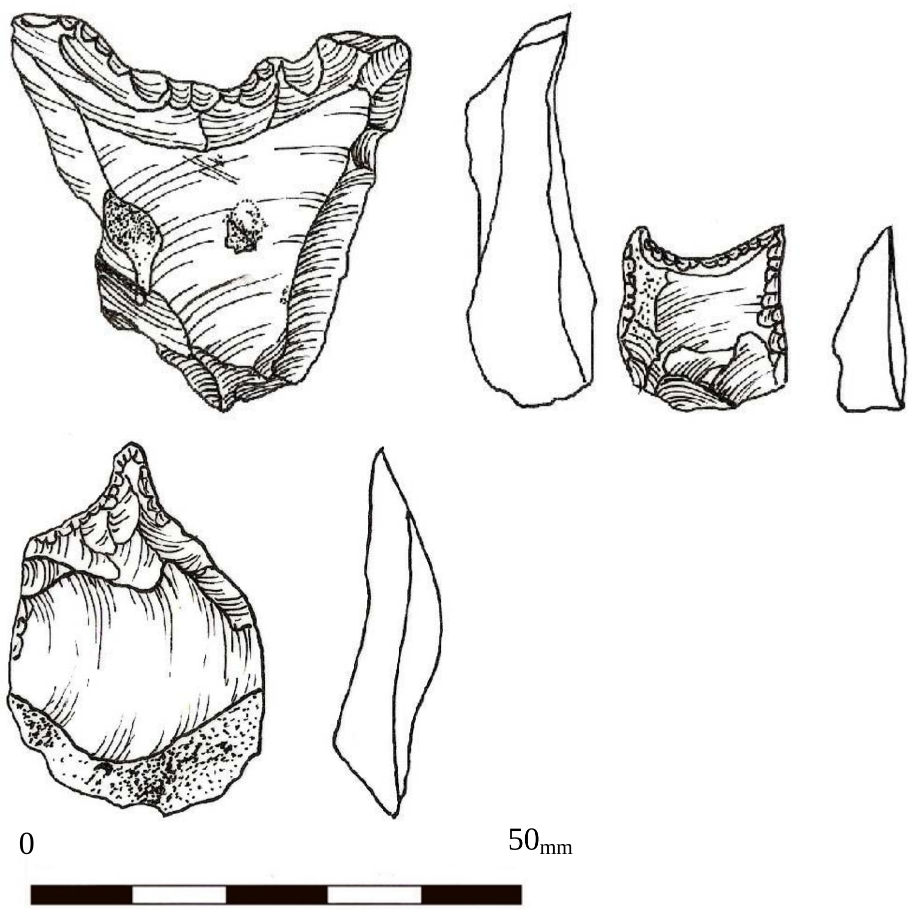


Fig. 6.3 Top right and left: horned scrapers. Bottom left: piercer. Drawn by N. Haken. Scale 50mm

One large circular nodule had been squared off on one of its sides to allow it to stand securely. Placed in this way there is what appears to be a natural flaw in the shape of a large eye on the upper side of the flint. This flaw has been worked on one side and is large enough to have held oil and a floating wick (Figure 6.4). Floating wick lamps of fired clay are known in Greece at this time (Parisnou 1998, 327-343).

Fig. 6.4 Possible Bronze Age flint lamp. Scale 20cm

Two pieces of flint from the same posthole in Hut A could have been depositional in that one was phallic in shape (Figure 6.5) and the other resembled a female pelvic girdle (Figure 6.6). The phallus was positioned above the girdle and was pointing in a south-easterly direction. Unfortunately weather and the lack of time at the end of the excavation made it impossible to photograph or draw the pieces *in situ*. A chalk phallus was found at Itford Hill (Burstow and Holleyman 1957).

The assemblage has general similarities with the earlier excavation at Black Patch in similar tool types and cores but also has specific similarities with the assemblage at Rathfinny Farm.

The Black Patch 2005-6 assemblage is described by Haken as a ‘typical of Middle to Late Bronze Age settlement flint work and is associated with processing hide and animal products, organic material and crop related activities, in and around the farmstead and workshop’ (Haken 2008, 14).

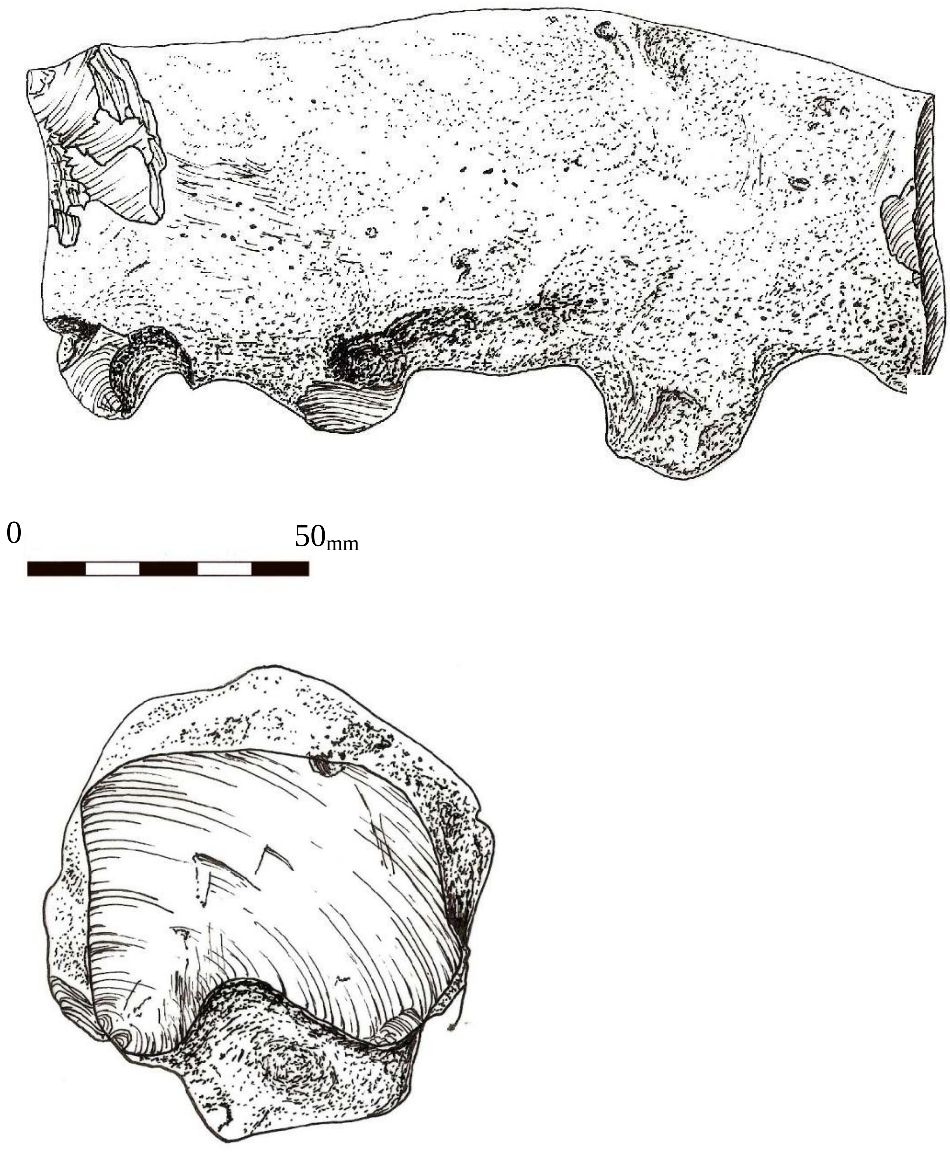


Fig. 6.5 Phallic shaped flint side view and end face. Drawn by N. Haken. Scale 50mm

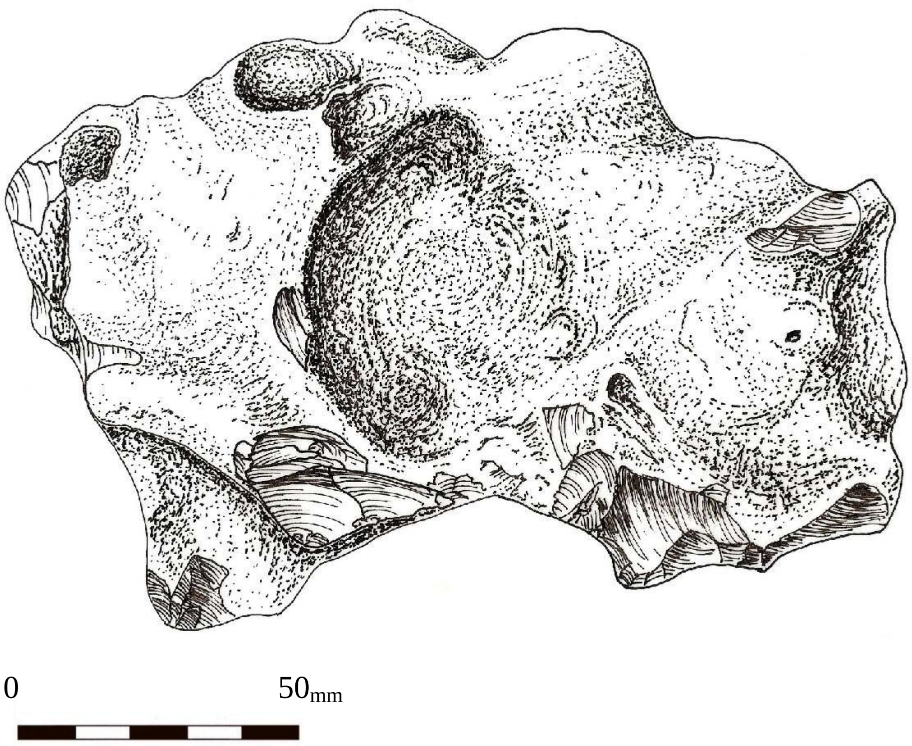


Fig. 6.6 Pelvic shaped flint. Drawn by N. Haken. Scale 50mm

6.2.3 Flint Distribution

The following Table shows the location of flint found in roundhouse features.

Table 6.1 Flint distribution at Middle and Late Bronze Age Downland Sites

Site	Constructional posthole	Internal posthole	Floor	Internal Pit	External Pit
Amberley Mount (Ratcliffe-Densham and Ratcliffe-Densham 1966)	None found	1LF	1S	1CF	None found
Black Patch 2005-6HP 3 (Haken 2008)	2LC 3RC 3RF 2LF 3LB 1RB	1LF 1RF 2LC 1C 1CB		2B	None found
Black Patch HP1 (Drewett 1982)	1L	None found	1S	1CB	None found
Black Patch HP4 (Drewett 1982)	3LB 2CB 1LC 2RC 5RF 2LF	1LB 3CB 3RC 4C 4LC	4S	1LC 1LB 1CB	None found
Blackpatch (Ratcliffe-Densham 1953)	All 4R 5 L	None found	1S	1LF	None found
Downsview (Underwood 2002)	2L 2R	1C	1S	1CB	None found
Heathy Brow (Bedwin 1982)	None found	None found	2S	None found	None found
Itford Hill	None found	None found	1S	None	None

Site	Constructional posthole	Internal posthole	Floor	Internal Pit	External Pit
(Burstow and Holleyman 1957)				found	found
Mile Oak (Russell 2002)	None found	None found	None found	None found	None found
Patcham Fawcett A (Greatorex 1993)	None found	None found	None found	None found	None found
Patcham Fawcett (Greatorex 1997)	3CB 1RC 1FC	1L 2C 1RC	None found	None found	None found
Plumpton Plain A and B (Holleyman and Curwen 1935)	1RC	None found	5S	None found	None found
Varley Halls (Greig 1997)	3CB	1C	None found	None found	None found
Totals	3LC 7RC 8RF 4LF 6LB 1RB 1FC 8CB 8L 6R	6LC 4RC 1RF 2LF 1LB 4CB 9C 1L	14	1CF 1LF 3CB 2B 1LC 1LB	

Key: LC= Left centre LF= Left front LB= Left back L= Left
RC= Right centre RF= Right front RB = Right back R=Right
C= Centre CF=Centre forward CB=Centre back S=spread

Table 6.1 shows that the number of features containing struck flint is much higher for Hut Platforms 3 and 4 at Black Patch than on other Downland sites. 29 of the 52 constructional postholes, 21 of the 28 internal postholes and five of the nine internal pits containing flint are at these two sites.

Figure 6.7 shows the distribution of flint finds in postholes on Downland sites featured in Table 6.1.

In the Figure, the external circle represents constructional postholes and the inner circle represents internal postholes. There is no overwhelming distribution pattern. The slightly left centric distribution is based on the predominance of Black Patch in the Figures but four of the nine centrally located postholes are not from Black Patch.

The most notable observation to make as far as the pits are concerned is the extremely low number of internal pits that contain flint, possibly more evidence of regular cleaning which could also explain the low number of postholes apart from Black Patch that contain flint. This leaves the question as to why Black Patch has a far larger number of features with flint than other sites.

8CB

4
6LB 1RB
1

3LC/8L 6/1 9 4 7RC/6R

2 1
4LF 8RF

1FC
Roundhouse entrance.

Fig. 6.7 Location of flint finds in roundhouse postholes from above analysis of 12 Middle and Late Bronze Age Downland Sites

6.2.4 Flint Assemblages

The following table is a brief synopsis of the flint assemblages from seven modern excavations of Downland sites.

Table 6.2 Flint Assemblages from six Middle and Late Bronze Age Downland sites

Site	Total	Description and tool numbers	Notes
Black Patch 1977-9 HP1 (Drewett 1982)	1203	M.B.A./L.B.A 11 scrapers 12 cores 5 hammer stones 4 tools 57 retouched flakes no points	734 flakes in topsoil
Black Patch 1977-9 HP 4 (Drewett 1982)	2772	M.B.A./L.B.A 49 scrapers 41 cores 32 hammer stones 9 tools 25 retouched flakes no points	1319 flakes in topsoil
Black Patch 2005-6HP3 (Haken 2008)	4560	M.B.A./L.B.A 66 scrapers 119 tools 7 points 72 retouched flakes 2 hammer stones 124 cores 58% tertiary flakes	2180 flakes in topsoil
Downsview (Underwood 2002a)	1951	L.B.A 30 scrapers 11 tools 2 retouched flakes 7 hammer stones no points	No topsoil
Mile Oak (Underwood 2002b)	2676	M.B.A./L.B.A 33 scrapers 19 tools 2 hammer stones 14 retouched flakes 34 cores 1 point(burin)	No topsoil
Patcham Fawcett A (Place 1993)	158	M.B.A./L.B.A 4 tools 2scrapers 2 retouched flakes 3 cores no points Small proportion of debitage is blade or blade-like	No topsoil

Site	Total	Description and tool numbers	Notes
Patcham Fawcett B (Place 1997a)	220	M.B.A./L.B.A 6 scrapers 1 tool 2 cores 4 retouched flakes no points	No topsoil
Varley Halls (Place 1997b)	393	BA 3 scrapers 2 points 4 retouched flakes 1 hammer stone 2 cores 71.9% secondary flakes	1 in topsoil

The sites can easily be divided into two groups, those with large assemblages and those with small ones. There is nothing to differentiate the Patcham Fawcett and Varley Halls geologies or topographies from the other sites since they are all on undivided Upper/Middle Chalk. Areas of Clay-with-flints are available close-by. The pottery assemblages from these sites are similar in quantity to the other sites.

Where knapping analysis has been done at Varley Halls and Black Patch, the former is dominated by secondary flakes and the latter by tertiary flakes. This could possibly indicate a smaller nodule size was being utilised at Varley Halls.

The commonest tool type at all the sites is the scraper. The relative percentage of scrapers to assemblage size is reasonably constant on all sites at about 1.5%.

Black Patch 2005-6 is very different from the other assemblages particularly the 1977-9 excavation in the presence of seven piercers (points). Only one other point is recorded at Mile Oak. Bronze awls which could have served the purpose of points have been found at the original Black Patch excavation, at Downsview and at Varley Halls. There is also a much larger percentage of other tools, cores and reworked flakes on Hut Platform 3 at Black Patch than on other sites, suggesting a longer life span for the work area than for the huts. A further notable discrepancy between the two Black Patch excavations is the number of hammer stones. Hut Platform 4 produced 32, as opposed to only two on Hut Platform 3. It is probable they were used for purposes other than flint knapping, perhaps as hammers in association with the bronze awls.

6.2.5 Discussion

The large number of flints found in internal features at both Hut Platforms 3 and 4 at Black Patch would seem to rule out natural post-depositional reasons for the totality of the flint distribution, as Hut A has an architectural flint covering and only one piece of worked flint was found under this tumble, the original floor surface. This leaves the probable explanations as either closing or funerary deposits. There certainly appear to be several structured depositions (spreads) in the huts on these platforms. It appears that whilst some flint is *in situ* some has arrived by post-depositional processes. The only way to disassociate the two processes is if discrete possibly repeated patterns are observable.

The large variety of certain types of flint tools (scrapers, blades and cutting edges) show specialized uses for flint. The number of flint tool types reduced from seven in the Neolithic to three in the Bronze Age (Bradley 1984, 157-73). Bronze is more useful for other tools like axes and weapons (Butler 2009, 126-7). The knapping of architectural flint at Black Patch as well as the concentration on specialized tools shows a large degree of practical ability.

The different assemblage sizes from the various sites are of interest. There would appear to be no topographical explanation, as all the sites are on slopes, the degrees of which do not tally with assemblage size. It is more probable that the size differences are due to longevity and type of landscape use, rather than the life spans of individual settlement sites. The radiocarbon date ranges for occupation at Black Patch, Downsview and Mile Oak are all about 300 years. Downsview is possibly longer-lived with one radiocarbon date (Oxa-4810) pointing possibly to a 600 year lifespan.

All three sites have Post-Deverel-Rimbury pottery and Mile Oak also has L.B.A radiocarbon dates. Patcham Fawcett and Varley Halls have Deverel-Rimbury and Post-Deverel-Rimbury assemblages and in the case of Varley Halls a long radiocarbon date range. Patcham Fawcett is 500m from the nearest known field system and other than two lynchet/ditches and a further ditch, which may be part of a small field system there is no evidence of Varley Halls being part of a large agricultural unit. Black Patch, Downsview and Mile Oak were all surrounded by large field systems. This also might account for the narrowness of the tool range at both Patcham Fawcett and Varley Halls.

Implicit in this assumption is that there must have been a large amount of downwards movement of flint into hut platforms and working areas over the use period of the site. This can be seen by the downward penetration of Mesolithic and Neolithic forms into the work area above Hut A on Hut Platform 3 at Black Patch. This must call into question the use of flint in activity area analysis, unless the excavator is certain that the assemblage is *in situ*. This is best achieved in the case of flint by the use of three dimensional finds recording and the assessment of the topography of the site.

6.2.6 Conclusion

By the Bronze Age flint had decreased in importance, often being replaced by bronze tools that were superior in function. The Downland assemblages only include flint tools for scraping cutting and piercing. The general lack of bronze finds on the above sites could be associated with funerary depositions away from the sites. The majority of structured depositions relate to what we would assume to be domestic activities, cooking and agricultural processing (Chapter 6.3 Fire-cracked Flint). The use of flint in building shows innovation.

The number of supposed depositions of flint or flint artefacts harks back to a previous age where flint had a ritual quality. This reveals a people who on the one hand were very practical and innovative, capable of taking up new technologies and discarding others but on the other tied to their memories and ancestors in certain non-functional beliefs.

6.3 Fire-cracked Flint

6.3.1 Introduction

Hot or heated stone technology has long been the subject of study and much debate (Hackett 1854-5; Trench 1885-6; Cantrill and Jones 1911; Lanyard 1922). The main disagreement was between the use of large areas of burnt stones as either cooking places or as saunas (Curwen 1934, 145-9). Although this debate is still unsettled, recent work has also concentrated on the various uses of heated stone on prehistoric sites (Hedges 1975; Barfield and Hodder 1987; Campling 1991; Jeffery 1991; Ramseyer 1991) ethnographic parallels: (Hurl 1990; Ramseyer 1991; Odgaard 2007) experimentation on the thermal impact of heating and cooling of stones (O'Kelly 1954; Buckley 1990; Seager Thomas forthcoming) and the ritual aspects (Brück 1999; 2001; 2006; Ambrosiani 2002; Bentsten 2007; Seager Thomas forthcoming).

Heated stone technology and its traces are quite often treated lightly by excavators through lack of knowledge (Seager Thomas forthcoming). Hearths are often misdiagnosed through the lack of fire-cracked flint in the context in question. The questions of cooking, heating and lighting are rarely discussed in hut constructional terms. The potential use in ritual is only just beginning to be studied. This is strange as fire-cracked flint is, after worked flint, the second most common artefact on Later

Bronze Age Downland sites. To redress the balance, I looked at ethnographical techniques and the traces they leave in the archaeological record and artefact patterning to examine possible practical and ritual uses.

6.3.2 Combustion

Understanding the combustion process of open fires using wood, dung or agricultural waste is essential to the understanding of the uses of hot stones in these circumstances.

There are four steps involved in bio-mass combustion all of which can take place simultaneously.

Firstly, at ignition, any water in the fuel will evaporate at about 100º C. The fuel will absorb heat energy.

Secondly, carbon, hydrogen and oxygen are released between 200º and 350º C.

Thirdly, the gases released in the second step mix with atmospheric oxygen and above 450º C ignite and radiate heat. This process requires sufficient heat, oxygen, space and time to ignite. This process is enhanced by a slightly turbulent airflow. When all the gases have been released from the fuel, charcoal is left.

Lastly, the remaining charcoal is burnt and oxidizes at around 800º C providing there is enough oxygen present. This oxygen needs to be not only in the combustion area but also above it. If there is insufficient oxygen above the fire poisonous carbon monoxide rather than carbon dioxide is produced (Odgaard 2007, 7-8).

6.3.3 Hearths

In the same article, Odgaard (2007) devises a hearth typology which is summarised in Table 6.3.

Table 6.3 Hearth typology

Hearths:	Without Rocks	With Fixed Rocks	With Moveable Rocks
Process:	Open Combustion Radiation	Open combustion Radiation. Convection	Closed combustion. Convection
Result	Light and Heat.	Light and Heat	Heat
Culinary options	Broiling/Grilling Boiling/ Cooking in a pot	Broiling/Grilling Roasting Boiling/ Cooking in a pot	Roasting Boiling/ cooking in pot Boiling with rocks

The efficiency of the hearths described in Table 6.3 will depend not only on the type of stone used but also the type of wood or other fuel used, the location of the hearth and the ability to control the supply of oxygen.

Experiments by Buckley (1990, 170-2) have shown the variability in properties of different rock types, particularly the number of heating/dowsing incidents before the rock is considered unreusable. These range from five for micaceous sandstone, through to more than 25 for vesiculated basalt and gabbro. However on the two Irish sites he studied, drift material was chosen with a preference for sedimentary rocks.

Flint is the obvious stone to use on Downland sites because of its ready availability, as it retains its heat well and is re-usable but its disadvantage is that it tends to spall when quenched in boiling water. Thus any liquid which has been heated in this way will be full of grit as well as ash. The latter problem is dealt with (ethnographically) by dousing the heated stone quickly in water to remove the ash before it is immersed in the liquid being heated (Figure 6.8).

It can be seen from Table 6.3 that both heat and light can be utilised from different types of heated stone technology. By looking at cooking, then heating and finally lighting, we can interpret what could be the possible use of various archaeological features.

6.3.4 Cooking

There are three main reasons for cooking food. These are to aid digestion, to prolong storage and to enhance flavour/texture. Any one of these can be the most important, depending on whether you live in a subsistence, seasonal or advanced consumer economy. For most prehistoric societies the first two, aids to digestion and storage, would be the most important to most of the population, except on occasions, such as feasting.

Different foods require different cooking techniques and times to optimise their usefulness. This is because different food groups contain various types of composition.

Fruits, vegetables, nuts, tubers, fish, molluscs and meat all have a different chemical make up and even subgroups like the organs and muscles of an animal will require different cooking techniques.

One of the easiest techniques is the use of heated stones to heat water. Figure 6.8 shows this and other methods of cooking used by Indians on the Northwest coast of America. Note the lack of ceramics.

Work by Wansnider (1997, 36-41) listed 19 ethnographic examples in which different pit-hearth food preparation techniques were used to cook various meat tissues, 88 different examples for cooking various plant tissues and six for mixtures of the two. All of these methods showed a thorough understanding of what was required from the cooking to produce the desired end product.

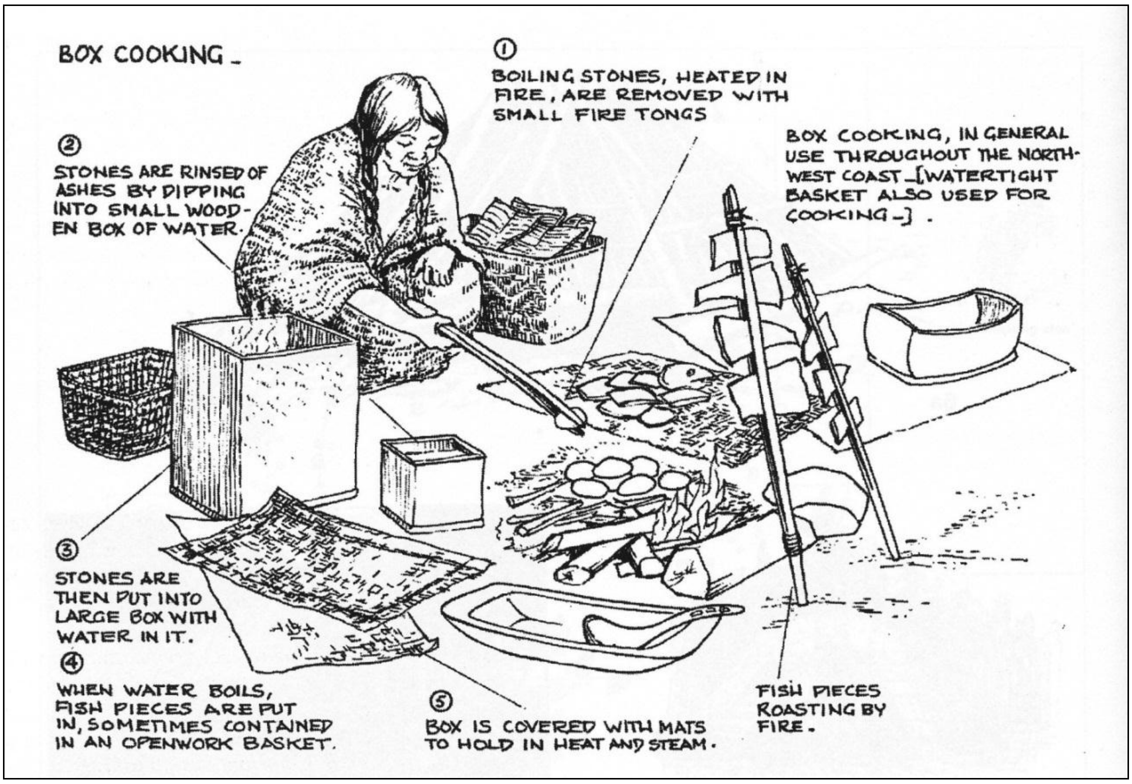


Fig. 6.8 Different cooking techniques from Northwest America. After H. Stewart 1977

Preferred cooking methods also depend on the availability of labour, the numbers to be fed, the time period over which they are to be fed, the availability of fuel and utensils and storage considerations (Figure 6.9).

The culinary options are given in Table 6.3 for each type of hearth. However there are also many ethnographic examples of, what Wansnider calls pit-hearths in his work (Figure 6.10). These are ovens of various sizes often dug for an individual feasting event. Wansnider quotes two episodes describing feasting of this sort (Linderman 1962; Gill 1880).

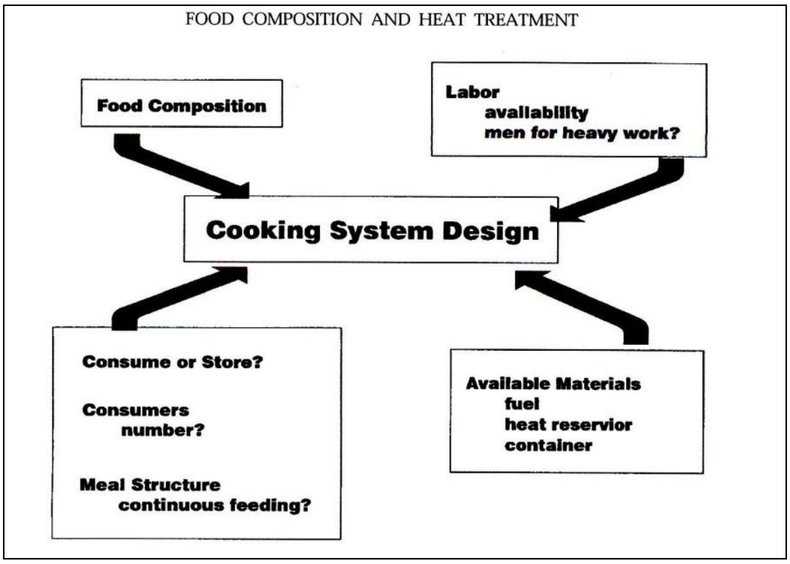


Fig. 6.9 Cooking System Design Model. (Wansnider 1997, 3)

Fig. 6.10 19th Century engraving showing a Polynesian oven, like those seen by travellers in the Western Pacific. From Domeny de Rienzi 1838 Steel engraving

Both describe feasting where a large hole was dug and either a fire was lit under some stones or heated stones were placed in the pit; onto these were then placed meat and or vegetables (fruit) that needed cooking. These foods were wrapped in leaves before being added to the pit. These were then covered in more hot stones and/or combustible material; in some cases water was then added. All this was covered with earth and left until cooked. The result was usually described as being delicious.

In ethnographic studies the size of pit ovens varies. They are usually between 300mm to 1500mm deep. Circumference, however, varies depending on what is being cooked. 500 mm is sufficient for a bread oven (Brown 1868, 383), whilst 9000mm is required for a large feast of 28 sides of fat rich pork (Steensberg 1980, 189-197). Most are about 1000mm.

Cooking times also vary from 2-96 hours depending on content with tough fibrous vegetation taking longest. The pork mentioned above took three hours.

6.3.5 Burnt Mounds

Burnt mounds are spreads of fire-cracked stones usually between 5 and 15m across and about 1m deep associated with watertight pits or troughs. They are usually but not always, found near to water sources. By the late 1980's, archaeological survey in Ireland had identified over 4000 burnt mounds. Over 2000 of these were in County Cork, making a distribution of one every 3.7 sq. kilometres (Ó Drisceoil 1988, 671-81). By contrast, there are very few in Sussex and whereas these sites are usually situated away from settlements those on the Sussex Downs are found within settlements. Whereas the pit-hearths described above have, mostly, been associated with dry cooking, burnt mounds have been associated with boiling (Ramseyer 1991, 88).

This association with water has led to the discussion of the possible use of burnt mounds as communal saunas (Barfield and Hodder 1987, 370-9).

6.3.6 Heating and Lighting

As can be seen from Table 6.3 above, hearths with fixed rocks, or without rocks, supply both light and heat, primarily by flame but dying embers will glow red giving some light. Both of these types of hearths give out radiant heat but only a hearth constructed with fixed rocks will supply a source of convected heat, provided there is a flow of air, for example from an opening in a hut. This air flow is also important to assist the conversion of carbon monoxide (a highly poisonous substance) to carbon dioxide. Hearths formed by movable heated rocks also heat by convection and have the added advantage of not being a fire or carbon monoxide hazard. For convection to work in this case, all the openings need to be closed so that the warm air above the stones can be convected around the hut. Hot stones are placed either in a shallow pit or on the hut floor for convection or under animal skins for radiant heat. When the flames have died

down and been extinguished there is no more possibility of carbon monoxide poisoning. Fixed rock hearths will act like removable hearths if all openings are closed.
Another possible form of lighting, oil lamps, is discussed in Chapter 6.2 Flint.

6.3.7 Other domestic uses

Many other uses of burnt stones have been suggested. These are summarized well by Barfield (1991). He lists the following: 'hearths being used for storage heating, back to the palaeolithic; beer making; canoe manufacture; drying meat or fish; fumigation to eliminate flies; butter production; pottery firing; leather preparation; metal working;… fulling and steam for birthing.' He adds three more: grease rendering, salt production and the bending of long timbers for construction purposes (Barfield 1991, 62-64).

6.3.8 Ritual Uses

Some communal cooking and bathing could be thought of as ritual usage of fire-cracked stone, particularly if those activities were part of an overall ceremony. Of course, there remain questions, such as where the dividing line between family activity and communal event is to be drawn, or whether piles of fire-cracked stones are the result of many small episodes or one large one.
Seager Thomas' sedimentological approach to fire-cracked stone deposition (Seager Thomas forthcoming), where the degree and form of fire cracking (dry or wet), stone patterning and colour are noted during excavation and clast size is measured after excavation, would probably give some guidelines for answering these questions. However, as few fire-cracked contexts have been examined in this way this is something for future archaeologists to pursue.
Ambrosiani (2002, 125-32) has made a start on this type of analysis in Sweden. He is using it to differentiate between rocks used in hearths and those that are fire-cracked through the use of fire to clear land or split rocks for grave construction. For the purposes of this paper, ritual use will be restricted to depositions of fire-cracked stone, possibly as part of a group of artefacts, for which it is hard to show a functional reason behind deposition as a group. It is, of course, possible that certain distributions could be functional as well as metaphorical and these will be discussed in the text.
The metaphor of burnt stone resembling cremated bone has been much discussed by Brück (1999; 2001; 2006). Much of her work uses the metaphor of the life-cycle as a basis for describing the actions of Bronze Age people. As such, she sees fire-cracked

stone as symbolic in several ways. Firstly, it is used in cooking, a symbol of the life-force. Secondly, it is used and reused in pottery as a filler. Thirdly, it is used in cremation and death pyres to represent the change by burning of flint and bone. The resemblance it has to cremated bone makes its deposition of great interest to her, particularly when associated with ceramics used as containers for food.

6.3.9 Interpretive methods diagnosing contexts containing fire-cracked flint

Hearth Structures

All possible hearth structures will be examined in the manner suggested by Odgaard (2007, 8-10).

Where feasible, not only will the contents of viable Downland hearths be examined in the manner of Table 6.4 but also the surrounding area and possible associated contexts will be examined in the same way.

Table 6.4 Hearth contents. Additional analysis where appropriate

Hearth Contents	Further analysis
Traces of combustion	None possible
Ash	None possible
Charcoal	Identify and quantify
Burnt bone or fat	Identify
Moveable rocks, possibly fire-cracked	Identify and quantify
Feature with an area of combustion, which can be a fixed stone construction	Identify contents and location

The type and amount of charcoal gives clues to hearth's use as different woods have different burning qualities. Unfortunately other fuels, such as dung, leave little remains on the chalk Downland. The context shape, dimensions and relative position were noted along with associated artefacts. Additionally, magnetic susceptibility and phosphate readings were used where available. A sedimentological approach was used in the small number of cases where it was possible.

Non-Hearth distributions with evidence of burning

A similar approach to non-hearth contexts will be made for postholes and pits, spreads and concentrations and associations with other artefacts.

6.3.10 Black Patch fire-cracked flint 2005-6

A total of 580 pieces of fire-cracked flint, weighing just under 25kg, was found at Black Patch in 2005-6 below the plough soil. This fire-cracked flint was contained in sixty different contexts, easily making this category of artefacts second only to worked flint in number and spread across the excavation. As such, it deserves much more attention than it is usually given in site reports where, although it might be mentioned in the narrative if something unusual is found, detail is only usually found, if at all, in the site archive.

Fire-cracked flint distribution

As can be seen from the distribution plan of fire-cracked flint (Figure 6.1), the main concentrations are in Hut A, the north-western part of Hut B, particularly around pit 297 and Hut C. The Hut C concentrations are around pit 2105 on the western side of the hut, around the centre of the hut and in the entrance doorway.

Three structural postholes from Hut A contained fire-cracked flint and all were on the left hand side when facing the house. They were from the inner ring 2279 and from the outer 149 and 2287. Two inner features also contained fire-cracked flint: a single piece in context 303 the perceived hearth and two in 2297 on the left of the building.

In Hut B, two postholes, both on the right of the building contained fire-cracked flint. The only internal feature to contain fire-cracked flint was pit 297, which contained 79 pieces weighing just over 1.2kg, averaging 15g.

In Hut C context 2149 located on the right of the hut contained fire-cracked flint, as did 2251 located on the left of the entrance also. Two centrally located postholes 2117 and 2173, contained 37 and 43 pieces respectively. The first feature contained 1.38kg, averaging 37g per piece and the second 0.59kg, averaging 14g, almost one third of the weight from the adjacent feature. Context 2153, the larger of a double posthole towards the front left hand side of the hut, contained a single piece. Pit feature 2125 also located at the back of Hut C contained 32 pieces of fire-cracked flint weighing 1.34kg at an average of 42g.

All the layers in Hut A contained fire-cracked flint. Context 2271, the layer above the chalk but below the flint tumble, contained 21 pieces of fire-cracked flint in an area 500mm x 700mm, weighing 3.2kg. The distribution is shown in Figures 6.12 and 6.13.

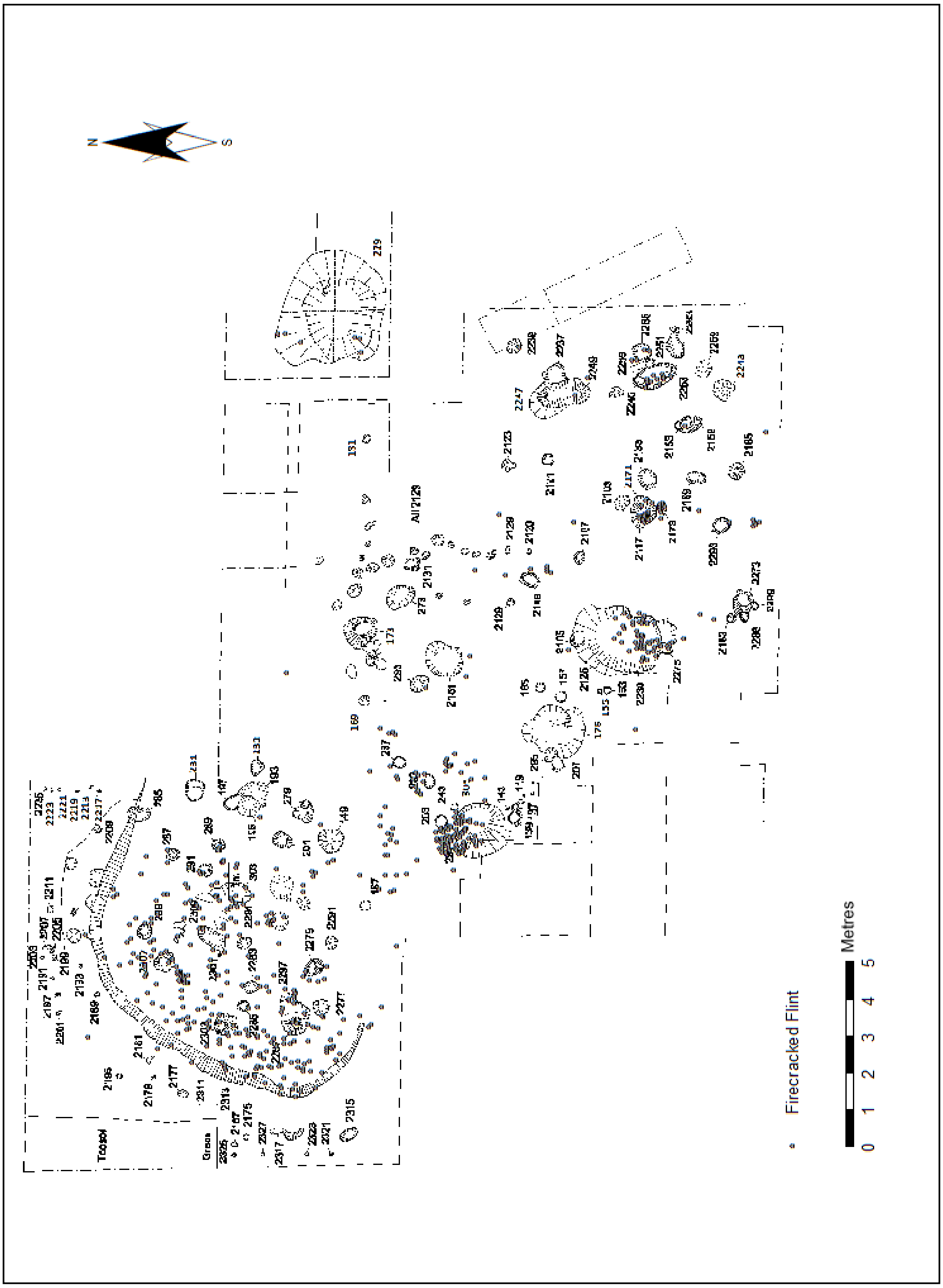


Fig. 6.11 Fire-cracked flint distribution at Black Patch

This deposition is less than 1m from the pottery deposition in the same context (Figure 6.14). The fire-cracked flint in this context contains small as well as large pieces and is differentially fissured and coloured. Close by in the same layer, as can be seen from Figure 6.12, were a spread of pottery, a late Neolithic knife, bone and part of a loom weight.

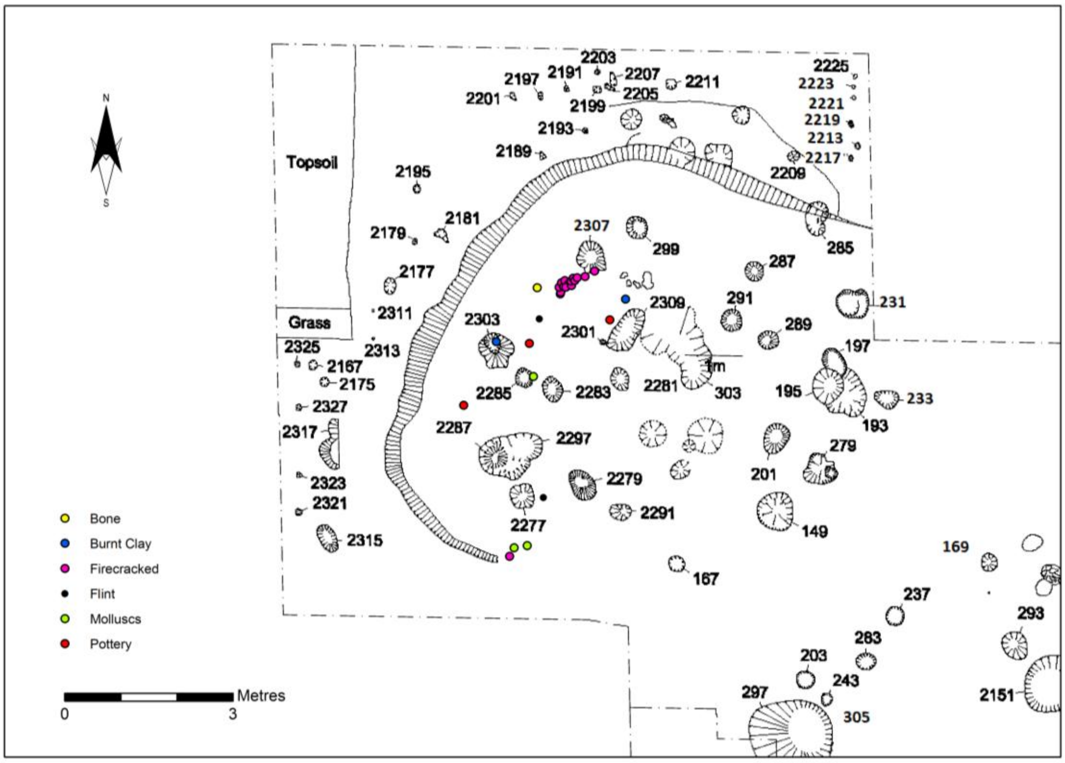


Fig. 6.12 Plan of layer 2271 containing the spread of fire-cracked flint, pottery, Neolithic knife, bone and burnt clay

Fig. 6.13 Reproduction of fire-cracked flint spread in 2271. Scales 50cm and 25cm

Fig. 6.14 Pottery spread in layer 2271. Scale 25cm

Fig. 6.15 Pottery from above spread showing variety of types. Scale 25cm

Fig. 6.16 Animal Bone from layer 2271. Scale 7.5cm

Fig. 6.17 Part of Loom weight from layer 2271. Scale 7.5cm

Fig. 6.18 Neolithic knife from context 2271. Scale 7.5cm

The rest of the layers in Hut A contained 9.2kg of fire-cracked flint but revealed no patterning by weight or position. Between them, the layers of Hut A contained half of the weight of fire-cracked flint from the entire site.

Hearth investigation

Table 6.5 All the features which contained fire-cracked flint and/or charcoal

Context No/ Type	**Location**	**Size**	**Amount of FCF. Number, Weight in Total +Av.**	**Charcoal/ burning**	**Bone**	**Other**	**Mag Sus**	**Notes**
149 posthole	Outside Hut A just left of entrance	300mm x 440 mm x200 mm deep	4 very small pieces	Yes	Yes	Pot Burnt clay	88	None
203 posthole	Roof support Hut B adj. pit 297	320 mm diam x220 mm deep	10 pieces weighing 47.1g in Total 4.71g Av.	No	No	Flint	96	None

Context No/ Type	Location	Size	Amount of FCF. Number, Weight in Total +Av.	Charcoal/ burning	Bone	Other	Mag Sus	Notes
297 pit	Back of Hut B		79 pieces weighing 1208g in Total 15.9g Av.	Yes	Yes	Pot Loom Wt Burnt clay Burnt Chalk Flint Shell	39-183	None
303 Amorphous shallow depression hut centre.	Centre of Hut A	1250mm x750 mm 30 mm deep	2 pieces weighing 80g in Total 40g Av.	No	No	No	127	None
2105 posthole	Roof support Hut C adj pit 2125	350 mm diam x250 mm deep	No	Charcoal	No	Pot Burnt clay Flint	68	None
2117 pit	Centre of Hut C Partially cut by ph 2171	850mm diam x225 mm deep	39 pieces weighing 1380.6 in Total 35g Av.	Charcoal	No	Pot Burnt Clay Flint	47	None
2121 posthole	Hut C Internal 1m behind entrance RF	310mm x270mm 180mm deep	No	Charcoal	No	Pot	29	None
2125 pit	Hut B Back of hut		32 pieces weighing 1340g in Total 42gAv.	Charcoal	Yes	Pot Burnt clay Flint Shell	18-98	None

Context No/ Type	Location	Size	Amount of FCF. Number, Weight in Total +Av.	Charcoal/ burning	Bone	Other	Mag Sus	Notes
2149 posthole	Roof support Hut C RB	400mm x 300mm x190mm deep	8 pieces weighing 462g in Total 50.7g Av.	Charcoal	No	Clay	43	None
2173 posthole	Hut C close to 2117	400mm x300mm x135mm deep	25 pieces weighing 517.9g in Total 20.7g Av.		No	Pot	36	None
2237 posthole	Hut C Internal right hand side of entrance	1200mm x 1100 mm x440mm deep	no	charcoal	No		158	Clay-lining
2239 posthole	Just outside HutC right hand side of entrance	400mm diamx300mm deep	10 pieces weighing 206.5g in Total 20.6g Av.	No	No	Flint	N/A	None
2245 posthole	Hut C Internal Left-hand side of entrance	200mm diam210 mm deep	17 pieces weighing 356g in Total. 21g Av.	charcoal Burnt layer at bottom 150mm	No	Pot	158	None
2251 posthole	Hut C Internal Left-hand side of entrance	200mm diam x200mm deep	1 piece weighing 5.8g	No	No	Clay Pot	68	None

Context No/ Type	Location	Size	Amount of FCF. Number, Weight in Total +Av.	Charcoal/ burning	Bone	Other	Mag Sus	Notes
2253 posthole	Hut C Internal Left-hand side of entrance	550mm x500mm x 330mm deep	12 pieces weighing 241.8 g in Total 20gAv.	charcoal	No	Pot Flint	88	Clay-lining and large flint on base of ph.
2265 posthole	Hut C Internal Left-hand side of entrance	500mm x400mm x 100mm deep	1 small piece Weight n/a	charcoal	No	Pot Flint	40	Clay-lining
2275 posthole	Edge of pit 2125	300mm diam 350mm deep	No	charcoal	No	Pot Flint	N/A	Large amnts of charco al
2293 posthole	Hut C Int LC	300mm x 350mm x 250 deep	6 pieces weighing 246.9g in Total 41.1g.A v.	Yes	No	Pot Flint	N/A	None
2297 scoop Containing 2287 posthole	Hut A Close to eves 2287 is roof support.LB	600mm diam 100mm deep ph 250mm diam 300mm deep	1 piece weighing 18.8g 2287 also had 1 piece weighing 4.3g			Flint (2287)	42	None

Magnetic susceptibility readings are 10 to the power -8 si.

As can be seen from Table 6.5 the features can be divided into three categories: those positioned centrally in the hut, those placed around the entrance and those placed around the perimeter of the rest of the hut. These categories will be examined in order.

Centrally Positioned Features

The amorphous scoop 303 in the centre of Hut A had only two small pieces of fire-cracked flint in it: however the high level of the ground magnetic susceptibility indicates a high level of burning and the context was identified as a hearth by Challands (2005) before the feature was uncovered.

There are no similar features in Hut B: a centrally located feature in Hut C 2117 contains both fire-cracked flint and charcoal, although the charcoal was too small to classify.

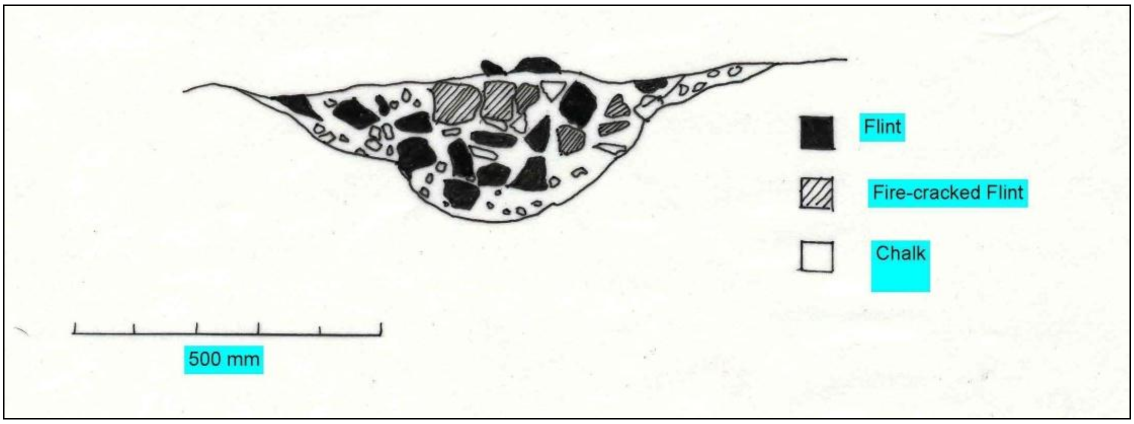


Fig. 6.19 Section drawing No. 5 context 2117. Scale 500mm

As can be seen from section drawing No. 5 (Figure 6.19), the fire-cracked flint is situated within the unburnt flint as it would be in a hearth. This was situated about 300mm to the south of a small feature 2173 which also contained fire-cracked flint. Whereas the fire-cracked flint in 2117 varied in size, that in 2173 was more uniform although the magnetic susceptibility readings for both pits were relatively low at 44 for 2117 and 36 for 2173 units.

Fig. 6.20 a) 2117 fire-cracked flint

Scale 200mm

b) 2173 fire-cracked flint

Scale 200mm

The magnetic susceptibility readings were taken in the field. Those readings taken under laboratory conditions of the same contexts were routinely between 1 and 10 units higher. Both pits had similar fills being high in chalk content. This has the effect of lowering the reading (Crowther 2008). It is also possible that the context had been cleaned.

The comparative uniformity of the flint indicates that the flint in 2173 (Figure 6.20 b) was being stored for use in 2117 (Figure 6.20 a). The small size of some of the flint in 2117 could be interpreted as spalls from fire-cracked flint that has been submersed in water to cool it. However, the seven pieces of struck flint from the context turned out to be three burnt fragments and four tertiary flakes. Tertiary flakes are knapped at the end of the tool making process and are therefore quite small; on further inspection the smaller pieces of fire-cracked flint could be seen to have been struck. As the type of hearth described above gives out light as well as heat, it is probable that knapping took place around the fire. The absence of larger flakes in the vicinity could imply that tool finishing or retouching of existing tools, producing a small amount of waste in size and quantity, was practised in the domestic area of the hut. The central position of the fire would afford visibility to all parts of the hut so that all areas could be used for craft work.

As well as light, this hearth would have been used to cook and heat the hut. Most of the smoke would have gone through the smoke-hole on the roof of the hut when combustion for cooking or lighting was no longer required. By shutting off ventilation (smoke-hole and doorway), heat could be transferred by convection as well as radiation.

Discussion

The high magnetic susceptibility reading for context 303 compared to its immediate surroundings leads Challands to conclude that it could well have been a hearth (Challands 2005). It also contained two pieces of fire-cracked flint.

The section drawing of context of 2117 (Figure 6.19) with the positioning of its contents, fire-cracked flint surrounded by unburnt flint, its size and shape is highly indicative of a hearth construction with movable rocks (Wansnider 1997, 36-41). Large amounts of charcoal and the variability in size of the fire-cracked flints indicate burning and is good evidence to suggest this was a hearth. The positioning nearby of context 2173 with a high degree of regularity in the size of its fire-cracked flints suggests it may well have been used as a store to feed the hearth with fire-cracked flint. There is reasonable support for the theory that both the larger huts had centrally placed hearths.

Features placed around the Entrance

The contexts associated with or very near the entrance to the huts were: 149, 2121, 2237, 2239, 2245, 2251, 2253 and 2265. These contained fire-cracked flint or charcoal or both. With the exception of 149 they are associated with Hut C.

They can be categorised in the following manner: large oval/amorphous pits, contexts 2237 and 2253, surrounded by what appear to be associated features, usually posthole sized. Most of these postholes also show a degree of burning. Those associated with context 2237 are 2247 and 2249 and associated with context 2253 are 2245, 2251 and 2265.

The best preserved of the two pit complexes was the one centred on context 2253.

The section and plan show a stepped single feature. The bottom of 2245 contained a burnt layer 150mm deep and a large flat flint (300mm x 400mm approximately) was found on the base of 2253. Context 2253 was clay-lined. The magnetic susceptibility readings from both contexts were high, with 2245 being slightly higher than 2253. The probable explanation of these features is the presence of an oven (possibly for bread) similar in position to those mentioned in Coles (1979) (Figure 6.21), although probably covered by earth or unformed clay.

Feature 2265, although smaller than 2253, was also clay-lined and therefore was also possibly an oven. Its location close to the wall of the hut is a problem as there is no reason why it could not be placed slightly further from the hut. There is, however, room for a wattle and daub wall between 2251 and 2265. This feature contained a sherd of

Post-Deverel-Rimbury pottery, as well as some Deverel-Rimbury sherds. It is therefore possible that this is a later feature.

Posthole 2251 contained only one small piece of fire-cracked flint and probably acted as both a structural posthole and as furniture for the oven.

Feature 2237 is an amorphous shaped pit although of a similar shape and size to context 2253 and 2265 combined. It also appeared to be stepped in function and was described as being possibly clay-lined. It had a high magnetic susceptibility reading and contained charcoal but no fire-cracked flint. This complex was in part damaged by the ploughing of the area. Given its similarity and positioning to the 2251 association of features, it is reasonable to ascribe a similar function.

Features 149 and 2239 are both placed just outside of the entrances to Hut A and Hut C respectively; 149 on the left and 2239 on the right. Neither contains charcoal but both contain small numbers of small fire-cracked flint. It is possible these were used as storage for fire-cracked flint, their size would indicate that they could have been used as ‘pot-boilers’.

All of the constructional postholes in Hut C that show signs of burning are placed on the right hand side of the hut, as is posthole 2121. The only one of these to contain fire-cracked flint is context 2149. This fire-cracked flint is similar in size to that found in internal posthole 2293 on the other side of the hut and is twice the size of that which would normally be used to radiate heat, possibly acting as some form of night storage heater. There is significant plough damage in the area of 2149 so it is perhaps that the relevant constructional posthole was not detected. It is possible to suggest that, given that it is the only constructional posthole to contain fire-cracked flint, it was in fact a storage heater not a posthole. There is not enough information to even make an educated guess as to the source of the indications of burning of these features. The same is true of features 2287 and 2297 in Hut A. Apart from the fire-cracked flint in 2271 associated with the pottery group nearby, the only other significant deposition was in the two postholes near the centre of Hut C. Interestingly, the feature with the larger size of fire-cracked flint also contained a large sherd of fabric 2 pottery.

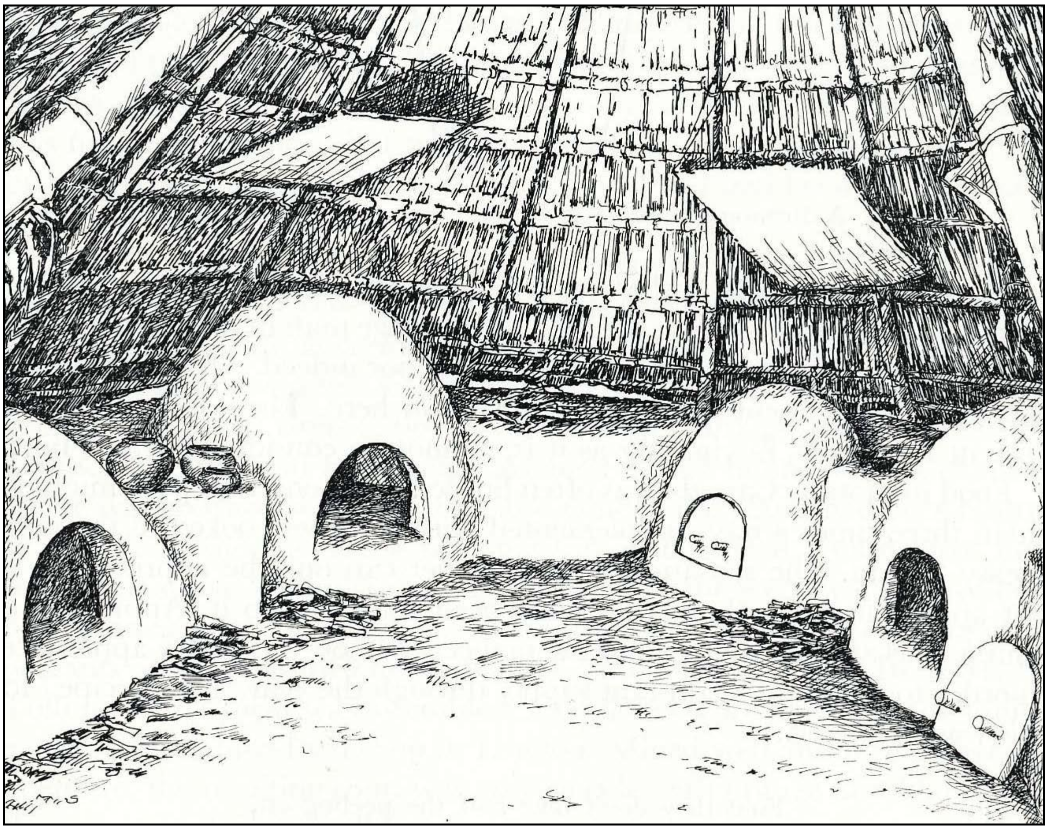


Fig. 6.21 Reconstructed ovens of clay in a simulated Iron Age house at Arsparn-an-der-Zaya, Austria. Drawn by R. Walker, in Coles 1979, 123.

Figure 6.21 shows how the thatched roof of a round-house can be protected from the heat of the ovens by shields of hide and wood. It is worth noting that, with a centrally positioned hearth, ovens at the front and storage heaters in the form of small pits of posthole size containing fire-cracked flints at the rear, each part of the house has its own source of heat.

Both huts B and C contain large internal pits at the rear and although they contain evidence of fire, it is so dispersed through the pits, as are other artefacts not related to hearths, that the evidence points to eventual midden use. However it is quite possible they started out as large earth ovens, perhaps for feasting, before the huts were built.

6.3.11 Comparison with other sites

Table 6.6 comprises the sites on the South Downs where the excavator has mentioned specific facts about fire-cracked flint in the site report or available archive. This is followed by a specific report on the fire-cracked flint at Black Patch 2005-6, a broader review of the fire-cracked flint at other Downland sites and a discussion of the conclusions that can be drawn from these investigations.

Table 6.6 Distribution of fire-cracked flint on Sussex Downland sites

Site	Cons. P.H.	Int. P.H.	Floor	Int. Pit	Ext. pit	Notes
Amberley Mount. (Ratcliffe-Densham and Ratcliffe-Densham 1966)	1 RB	1C +1pit (60cm)	2S	2LF	None	Hut 1: All 4 phs had charcoal. Fire-pit contained pot-boilers, charcoal, burnt wood. Burnt bone pot flint all stained black 950mm x 800 x 500mm 2 phs are poss. structure connected to the pit Hut 2 pit 1 contained charred wood animal bone, packing flints and pot boilers in a dark matrix 500mm in diameter Pit 2 was an oval pit c 1000mm by 1400mm contained the same fill as the hut floor. 2phs are a poss. structure connected to pit2. They are α and β the first contained FCF and the second charred wood, packing flints, pottery and a polished flint knife. There was a spread of burnt clay adjacent to pit 2
Black Patch 2005-6 (Tapper in prep.)	1LC 1LB 3LF 3RB 2CF	1LF 1LB 3C	2S	2LC	None	
Black Patch HP1 (Drewett 1982)	N/A	N/A	N/A	N/A	N/A	
Black Patch HP4 (Drewett 1982)	N/A	N/A	6S	N/A	N/A	
Blackpatch (Ratcliffe-Densham 1957)	4R 5 L	None	1S	1LF/P	1	
Charlston Brow (Field 1939)	N/A	N/A	1S	N/A	3	Southern site contained burnt flint and charcoal plus pit with undercut shelf 1400mm diam x 950mm deep

Site	Cons. P.H.	Int. P.H.	Floor	Int. Pit	Ext. pit	Notes
Cock Hill (Ratcliffe-Densham 1961)	Unrecorded	2C	4S	None	None	Hut 3 pit vii contained many burnt flints and pot 950mm x 900mm x 30mm
Downsview (Rudling 2002b)	2R 2C 2L 1RF	None	6S	1C	3	Pit 2054 contains a lower fill flint and ironstone a middle fill and an upper fill containing 19 pieces of fire-cracked flint weighing 1175g 3 phs poss. associated with 2054 Pit 2143 contains mixed charcoal and burnt flint 105 pieces weighing 2275g 720mm diam x 400mm deep with vertical sides Pit 4049 contained 14480g of fire-cracked flint plus charcoal
Ford (Place 2003)	None	None	None	None	8P	
Heathy Brow (Bedwin 1982)	N/R	N/R	2S	N/R	N/R	
Itford Hill (Burstow and Holleyman 1957)	N/R	N/R	5S*	LC	N/R	
Mile Oak (Russell 2002)	N/A	N/A	3S	N/A	N/A	Hut 2 pit 1464 had 5 different types of wood charcoal 1100mm x 1000mm x 80mm No record of FCF but it was found on hut floor along with bones
New Barn Down (Curwen 1934)	N/R	N/R	1S*	N/R	1PH	
Patcham Fawcett A (Greatorex 1993)	None	None	None	None	1 4PH	Pit 372 contained 408 pieces of FCF weighing 5825g and six different types of charcoal. It was surrounded by phs 378, 386 and 388 and slots 380 and 390. Both slots and ph 378 contained FCF 520mm x 70mm deep

Site	Cons. P.H.	Int. P.H.	Floor	Int. Pit	Ext. pit	Notes
Patcham Fawcett B (Greatorex 1997)	1C1L 2R 1RF	3C 1R	None	2C 1R	6 9PH	Pit 51 contained a top fill of 702 pieces of FCF weighing 19120g. The bottom fill contained 557 pieces weighing 10085g. Both contain pot, M.B.A. in top fill IA in bottom. The bottom fill also contained bone and foreign stone including 9 beach pebbles and a whetstone. Bottom fill also contained 6 different types of charcoal. 1200mm x 450mm Hut 2 ph58 had 8 pieces of FCF weighing 1440g plus pottery fired clay and worked flint. Hut 1 pits 84 and 94 contained 73 and 49 pieces of FCF weighing 2595 and 4696g respectively. Both also contained charcoal of different types 5 in 73 and 3 in 49 and bone 500m diam and 300mm diam Ph 175 entrance contains 89 pieces of FCF weighing 1272g plus bone and pottery 600mm in diam. Hearth 3 contained 5007 pieces of FCF weighing 183030g plus bone foreign stone and 4 diff charcoals associated features 1 and 6 contained 120 and 114 pieces respectively weighing 1780 and 3100g
Plumpton Plain	None	None	5S	1LF 1B	None	Enc3 C 1Hole 1 contained large flints, 60 pieces of FCF and charcoal. It was basin shaped 450mm in diam at top and 300mm at bottom 300mm deep Enc 3 C II Hole 10 contained a great many calcined flints and sandstone
Varley Halls (Greig 1997)	1LB	None	2S	None	Nine	
Totals	4RB 8R 2RF 2LB 8L 3C	2L 6C	39S	1RB 1R 3LC 4LF 3C	13 23PH	

Key:
LC= Left centre LF= Left front LB= Left back L= Left N/R= Not recorded
RC= Right centre RF= Right front RB = Right back R=Right
C= Centre CF=Centre forward CB=Centre back S=Spread
S*= Spread in depression PH =Posthole

Before looking at the distribution, the above table shows the difference in technique between excavators. 'Not available' means the artefact record has been lost and only references in the final published report have been taken. 'Unrecorded' means that fire-cracked flint as a class was not recorded and only pieces that were mentioned in the published report are included. This will inevitably skew results but not so much as to change the conclusions. Figure 6.22 shows the distribution of flint finds in postholes on eight Downland sites.

```
                  0CB
                   0
2LB                    4RB
               0          1

  8L       5      12      1     8R

0LF    4            0    2RF
                   0FC
                 Entrance
```

Fig. 6.22 Location of fire-cracked flint finds in roundhouse postholes from above analysis of eight Middle and Late Bronze Age Downland Sites

Looking at the distribution from this Table but ignoring the input from the 2005-6 excavations at Black Patch, it will be seen that 12 of the features containing fire-cracked flint are centrally positioned and another five are just to the left of centre. Although some of these are defined as structural postholes, a large number of centrally positioned pits have been described as containing multiple posts (Burstow and Holleyman 1957, 191) and are therefore larger in size than a normal structural posthole.

Six features at the front, associated with hut entrances, have fire-cracked flint. Of the remaining structural postholes, nine are on the right and seven on the left.

Black Patch 1977-80

The floor of Hut 1 on Hut Platform 4 has very little burnt flint. Hut 2 has a distribution pattern limited to the entrance and the back of the hut with a small concentration on the right-hand side under the eaves. Hut 3 had a relatively even spread but again the patterning favoured the front and the rear right hand-side of the hut. Hut 4 was more interesting, with discrete scatters of fire-cracked flint close to what are described as pottery clusters. There was also a small distribution across the front of the hut. Hut 5 contained one small discrete group in the centre of the hut. This was the only hut which contained a feature with fire-cracked flint in it; feature 040, just inside the entrance on the right-hand side.

Itford Hill

No constructional postholes were reported to contain burnt or fire-cracked flint. Feature 18, a shallow depression in the middle left of the hut, was described as being full of burnt flint.

Enclosure II, a long (approximately 5.5m), thin banked area, contained many thousands of pieces of fire-cracked flint concentrated in two depressions at either end of the enclosure. No charcoal was found in the area. The only other finds were 85g of Later Bronze Age pottery together with Roman and Medieval pottery. Huts D, K, L, M and N all had scatterings of fire-cracked flint across their floors.

Mile Oak

No features associated with buildings, other than their floors, were reported as having fire-cracked flints within them. Roundhouses 1, II and III all had fire-cracked flint on their respective floors. However, in Trench K, one of the layers, 312, in mound KII contained approximately one tonne of fire-cracked flint and layer 393 in mound KIII, was described as ‘fire-cracked flint’. The vast majority of pottery from these mounds was Post-Deverel-Rimbury.

Downsview

The only constructional postholes to contain fire-cracked flint were all located in area J. Four postholes, two on the right and two on the left of the round-house, 4073, 4066, 4081 and 4075, contained fire-cracked flint. Postholes 4012 and 4013 positioned at the back of the hut building on terrace 4003 contained fire-cracked flint.

The only building to have an entrance posthole (4068 on the right-hand side) containing fire-cracked flint was the same hut in area J above.

Area A contained several pits with fire-cracked flint. Pit 2143 placed centrally on the left of hut terrace 2046, had two bottom fills (2145 and 2146), which contained much burnt flint. The lower 2146 also contained charcoal. The floor of this terrace contained little fire-cracked flint, the two fills 2047 and 2052 contained approximately 500g.

The floor of hut terrace 2062 contained even less and 2063 contained 3 pieces weighing 150g. The centrally placed equivalent feature to 2143 (Table 6.6), pit 2090, contained no fire-cracked flint.

Hut terrace 2048, a much smaller terrace, contained 6.65kg on its floor.

The other feature in this area to contain fire-cracked flint was a nearly circular pit 2054, 2.7m x 2.4m. It contained just over 1kg in its top fill together with four sherds of Late Bronze Age pottery.

Feature 2259, a small pond 6.3m x 4.7m in Area B, yielded one piece of fire-cracked flint.

All the features in Area C contained fire-cracked flint. Pits 2039, 2158 and 2276 contained 660, 2075 and 100g respectively. The middle feature also contained three Late Bronze Age pottery sherds. Feature 2296, south of pit 2158, also contained burnt flint and chalk but had no dating evidence.

In Area D, building terrace 2042 contained 5.2kg of fire-cracked flint, all of which appeared to be hill wash. Other than the terrace fill, there is no record of any other features with fire-cracked flint in area D.

Area E has no record of fire-cracked flint in any feature.

Area F has no record of fire-cracked flint in any feature.

Area G contained building terrace 2050. The layers of this terrace contained 505g of fire-cracked flint all from layer 2328 which is considered to be hill wash. However, layer 2096 believed to be a floor deposit covering the western side of terrace 2050, contained four sherds of Middle Bronze Age pottery and 200g of fire-cracked flint. No other fire-cracked flint was reported from Area G. Only the large pit 2340 in Area H was reported to contain 200g of fire-cracked flint.

Area I contained building terrace 2262. Over 2000 small finds, mostly fire-cracked flint, were three dimensionally recorded on this terrace. Unfortunately, this plot was never produced. No other feature on this terrace was recorded as having contained fire-cracked flint.

Area J contained more structural features with fire-cracked flint than any other. The terrace fill 4065, contained 43 pieces of fire-cracked flint weighing 2.3kg and 4003, contained 266 pieces, weighing 8.6kg.

Pit 4029 in area l, to the north of area A, contained 14.5kg of fire-cracked flint.

Although the analysis of this site has been useful, mostly in confirming distributions at other sites, the amount of disturbance and the recording of fire-cracked flint from this site leaves a lot to be desired especially as a large part of the archive is missing.

Varley Halls

This is another site that appeared to have very little fire-cracked flint. The only constructional posthole to contain any was from the first phase of Hut 1. Context 137, a small posthole located at the back of the hut just on the left hand side, contained 11 pieces weighing 460g.

The layers of Huts 1 and 2 both contained just over 1kg of fire-cracked flint, whilst Hut 3 contained no fire-cracked flint at all. Hut 4 contained 25 pieces most in layer 211 and positioned centrally on the right hand side of the hut or towards the back of the hut on the line of the hypothetical entrance. The excavator warned about reading too much into the plot of finds from Hut 4 as it was quite small and had been plough damaged. Hut 5 contained three pieces of fire-cracked flint.

Patcham Fawcett A

No constructional feature or associated layer of any potential building contained fire-cracked flint.

Several of the 28 excavated pits contained fire-cracked flint. Pit 281 had one piece of fire-cracked flint in its eastern half in a fill described as light grey brown silty clay loam. The fill of its western half was entirely different, being purely chalk fragments. This was probably due to partial excavation in the 1950’s. Pit 36 also contained one piece of fire-cracked flint. Scoop-shaped pits 253, 319 and 357 contained fire-cracked flints as well as bone. The scoop with the most fire-cracked flint was 253, with 22 pieces weighing 560g. It also contained 18 large sherds of Deverel-Rimbury pottery. The fabric of these pieces was described as very coarse flint tempered.

Pit 279 contained one piece of fire-cracked flint along with bone and 13 sherds of Middle Bronze Age pottery.

Two inter-cutting pits, 251 and 301, contained what was described as Middle Bronze Age rubbish. The top layer, 252 that covered both pits, contained pottery, fired clay, bone, worked flint and foreign stone as well as fire-cracked flint. One of the lower fills from 251 also contained worked flint.

Feature 166 is similar to pond features found at other sites. It contained 1.46kg of fire-cracked flint as well as worked flint and pottery.

A shallow circular feature, 372, contained 408 pieces of fire-cracked flint, ranging in size from 5-60mm and weighing 5825g. This feature was interpreted as a cooking pit for steaming food by placing it on a griddle. The floor of the pit was clean, indicating to the excavator that the flints were heated elsewhere. Two shallow slots were located just to the east and west of the pit, 380 and 390. 380, located on the west of the pit, was intercut by posthole 378. On its southern end, 390 had two postholes located 200mm to the south. These have been interpreted by the excavator as a possible wind shield. However, both 380 and 390 contained fire-cracked flint, with 55 pieces weighing 250g and 117 pieces weighing 1.705kg. In addition, posthole 378 contained seven pieces weighing 333g. 378 also had evidence of post packing, suggesting an alternative interpretation for at least those two slots for storage of fire-cracked flint. Both 372 and 378 contained charcoal and 390 had one sherd of Late Bronze Age pottery.

Patcham Fawcett B

Many more constructional postholes contained fire-cracked flint than at Patcham Fawcett A, in part explained by there having been much less plough damage.

In Hut 1, three constructional postholes 177, 187 and 203 contained fire-cracked flint. Posthole 203 is centrally located on the left-hand side of the hut, 187 is located to the right of 203 and 177 is situated at the back of the hut on the right hand-side and contained six large sherds of B.A. pottery.

In Hut 2, context 68, placed in a similar location to 177 in Hut A also contained fire-cracked flint.

One posthole belonging to the four-poster building 74, located in the south-west of the building contained fire-cracked flint.

Posthole 175, placed on the right-hand side of the entrance of Hut 1, contained 89 pieces of fire-cracked flint and seven small sherds of B. A. pottery.

Five internal features in Hut 1, 84, 90, 92, 137 and 141, contained fire-cracked flint. The first three of these are relatively small and are centrally located within the hut. Context

90 is under the eaves on the right-hand side. Context 84 is more centrally located on the same side and 92 is placed right at the centre of the hut. They contained five pieces weighing 252g, 73 pieces weighing 2595g and two pieces weighing 10g respectively.

Context 137 is a large pit centrally located on the right-hand side of the hut. Context 141 partially cuts it on the inner side. 137 contained eight pieces of fire-cracked flint weighing 365g and 141 contained 49 pieces weighing 226g. Context 137 also contained one sherd of M.B.A. pottery.

In Hut 2 feature 58, a posthole located centrally on the right-hand side of the hut, contained eight pieces of fire-cracked flint weighing 1.440kg as well as one small sherd of M.B.A. pottery. This feature was only half sectioned.

Of the 27 pits excavated at Patcham Fawcett B just over half (15) contained artefacts. All of these features contained fire-cracked flint, ten contained bone, nine pottery and surprisingly only five contained worked flint.

The excavator, Greatorex, grouped the pits into categories, which will be used here.

Six pits were categorised as having gently sloping, concave sides and rounded bases averaging 1.35m in diameter and 0.20m in depth. Of these six pits, four contained fire-cracked flint. 124 had two pieces weighing 45g, 181 had five pieces weighing 64g, 322 had three pieces weighing 150g and 290 had two pieces weighing 10g. The first three of these features also contained pottery made from fabric 2 - Coarse flint tempered. This is the same fabric found in all the constructional postholes in the roundhouses above.

Of the five pits categorised as having a basin-like profile, only 199 and 51 contained fire-cracked flint. 199 had three pieces weighing 160g. It also contained bone and fabric 2 pottery. Pit 51 had two distinct fills. The primary fill, 53, contained 557 pieces of fire-cracked flint weighing just over 10kg. It also contained some diagnostic Middle Iron Age pottery. Immediately above fill 53 is fill 52, which contained 702 pieces of fire-cracked flint weighing just over 19kg. It also contained Middle Bronze Age, Early Iron Age and Middle Iron Age pottery. Both contexts contain foreign stone (not found in the locality of the site but imported from place of origin) and bone. Context 52 also contained worked flint.

Three inter-cutting pits located on the south-west area of the site all contained fire-cracked flint. Context 389 contained 13 pieces weighing 859g, 391 contained 27 pieces weighing 1.773kg and 393 contained six pieces weighing 233g. Contexts 389 and 391 contained bone. 391 also contained worked flint and Late Bronze Age pottery.

Pit 155, which has been discussed elsewhere appeared to have been cut to accommodate an Ellison type 6 vessel made from fabric 2 and contained five pieces of fire-cracked flint as well as bone, worked flint and foreign stone.

Pit 37 contained six pieces of fire-cracked flint as well as pottery, worked flint and the skeleton of an immature bovine (calf).

Both of the large circular scoops found on the site contained fire-cracked flint, pottery, bone, flint and foreign stone. Whist context 106 contained only six pieces of fire-cracked flint weighing 270g, context 166 produced 572 pieces weighing almost 17kg.

Feature 3, a shallow sub-circular feature with concave sides and a flattish base, contained 5007 pieces of fire-cracked flint weighing just over 1.83kg. As with the similar feature at Patcham Fawcett A, the chalk at the base of the feature showed no sign of burning. The feature is orientated north-south and on the north-west side are two smaller features, 5 and 7, that could have formed part of a structure protecting feature 3. Context 5, the bigger of these two features, contained 114 pieces of fire-cracked flint, weighing just over 3kg.

Plumpton Plain

No constructional postholes or internal features contained fire-cracked flint. However, most hut floors had fire-cracked flints.

The floor of Hut-site A-E II, C I contained about 24 fire-cracked flints. The floor of Hut-site A-E III, C II contained a bowl-shaped feature, Hole 10, about 650mm in diameter at the top and 325mm in diameter at the bottom, situated just inside the left-hand side of the hut near the entrance. It contained a great many fire-cracked flints as well as foreign stone and pottery. Several other small scoops just to the south of the hut also contained fire-cracked flint and pottery. In the centre of the hut floor there were two vessels in an upright position. In the immediate vicinity was a large number of fire-cracked flints.

The floors of hut B-C I, B-C II and B-C III all contained a large number of fire-cracked flints.

Hole 1 in Cutting 1 (A-E III, C I) was similar to hole 10 in Hut-site A-E III CII and contained 60 fire-cracked flints.

Enclosure IV, Cutting IV (A-E IV, C IV) contained an unusual feature described by the excavators thus: ‘A large number of calcined flints were found on the surface of the bank at a point where it made a right angle just north of the eastern entrance. A cutting

16 feet by 10 feet (5m by 3m) was accordingly made here. A solid bed of calcined flint averaging 5 feet (1.6m) wide and 1 foot (0.3m) thick ran almost across the cutting at right angles to the direction of the rampart. It was 14 feet (4.5m) long and petered out at both ends in fine flint grit and mould. It will be seen from section A-B that the bed had rounded sides, which, with the fact that only a very small quantity of charcoal was found, proves that the flints were first heated elsewhere and then deposited in a trench which had been dug to receive them. Seven boulders of greyweathered sandstone (probably sarsen) exhibiting no traces of calcination were found among the flints; four were roughly 1 foot (0.3m) and the other was slightly smaller. A handful of coarse grit tempered sherds, one flint scraper and four flakes were also taken from the cutting. This cutting is a close parallel to Cutting V of the New Barn Down Late Bronze Age compound, where a similar mass of calcined flints was investigated. Its excavators said, 'What purpose it could have served other than for cooking it is hard to imagine. Its size suggests communal use and bearing in mind the complete absence of animal bones and hearths in the huts, may it not have served as an oven for the baking of bread?' (Holleyman and Curwen 1935, 26-7).

Ford

Six postholes at Ford contained fire-cracked flint 1028, 1067, 1178, 1220, 1255 and 1442. The majority had less than 10g with 1255 having the most at 145g. All these postholes also contained pottery.

As with the postholes, all the pits containing fire-cracked flint also contained pottery. Of the eight pits containing both fire-cracked flint and pottery, only 1421 contained more than 500g of fire-cracked flint. It contained 13 pieces weighing 650g. Similarily, no pit containing fire-cracked flint contained a significant weight of pottery.

Hearth investigation

Table 6.7 lists features with fire-cracked flint or other evidence of burning, as well as features that have no evidence but which are positioned either centrally, near perimeters or entrances of structures.

Table 6.7 Potential hearths for Sussex Middle/Late Bronze Age sites

Site Context No/ Type	Location	Size	Amount of FCF. Number, Weight +Av.	Charcoal/ burning	Bone	Other finds	Poss. other hearth features	Notes
Amberley Mount Hut 1 Pit2 (Ratcliffe-Densham, H.B.A. and M.M. 1966, 9-14)	S.E.of Hut 1 just inside	950mm x 800mm 500mm deep	Yes	Charcoal Contents stained black	Yes	Pot Flint	No	Incomplete excavation?
Amberly Mount Hut 2 Pit 1 (Ratcliffe-Densham, H.B.A. and M.M. 1966, 14-16)	Right centre	500mm In diam.	Yes	Charred wood Dark soil	Yes	No	No	Flint Packing
Amberly Mount Pit 2 (Ratcliffe-Densham H.B.A. and M.M. 1966, 14-16)	S.E.of Hut2 Just inside	1400mm x 1000mm	Yes	Charcoal Contents stained black	Yes	Pot Flint		
Black Patch 77/80 Hut 1Pit 161 Hut 3 Pit 47 Drewett 1982,)	Both central.							
Charlston Brow pit CD South site (Parsons, W.J. and Curwen, E.C. 1933, 166-174)	West of rampart and just outside	1400mm x 1400mm 950mm deep	150	Charcoal Black mould				Shelf

Site Context No/ Type	Location	Size	Amount of FCF. Number, Weight +Av.	Charcoal/ burning	Bone	Other finds	Poss. other hearth features	Notes
Cock Hill Pitvii (Ratcliffe-Densham, H.B.A. and M.M. 196I, 87)	E of Hut 3 just outside	950mm x 900mm 300mm deep	Many	Charcoal		Pot	F	
Cock Hill (Ratcliffe-Densham H.B.A. and M.M. 196I, 86-7)	Centre of huts 2 and 3 Another pit hut 3 600mm from centre full of FCF							
Downsview Pit 2054 (Rudling 2002, 151)	SE of HP 2242	3000mm diam 350mm deep	19 pieces weighing 1175g		Yes	Pot		Also contains most of sites Iron/ Stone
Downsview Pit 2143 (Rudling 2002, 147)	HP 2046 Centralnear back of hut	720mm diam 400mm deep	105pieces weighing 2275g	Charcoal Black soil				3 different types of charcoal
Downsview Pit 4029 (Rudling 2002, 162)	Area l no plan	600mm diam 450mm deep	14480g	charcoal				2 different types of charcoal
Downs View Pits 2090, 2394 (Rudling 2002b, 147-148, 162-3)	Centre of hut 1 and hut 9						Thought by excavator as fire-pits	

Site Context No/ Type	**Location**	**Size**	**Amount of FCF. Number, Weight +Av.**	**Charcoal/ burning**	**Bone**	**Other finds**	**Poss. other hearth features**	**Notes**
Itford Hill (Burstow, G.P. and Holleyman, G.A. 1957, 171-188)	Centre of Huts A,B,C,D, H, M and N						Described by excavator as centre post holes	
Mile Oak Pit 1464 (Russell 2002, 12-15)	Hut 2 Back of hut	1100mm x 1000mm 80mm deep.		charcoal				5 different types of charcoal
Mile Oak Pit 347 (Russell 2002, 8 -12)	Centre of Hut 1						Possible Fire-pit	
Patcham Fawcett A Pit 372 (Greatorex 1993, 15-17)	60m East of hut near edge of excavation	520mm diam 70mm deep.	408 pieces weighing 5825g	charcoal				6 different types of charcoal
Patcham Fawcett B Pit 51 (Greatorex 1997, 8-10)		1200min diam 450mm deep	702 pieces weighing 19120g top 557 pieces Weighing 10085g		Yes	Pot Stone Flint Charred seeds		Basin shaped 6 different types of charcoal
Patcham Fawcett B Ph58 (Greatorex 1997, 5-7)	Hut2 rc		8 pieces weighing 1440g			Pot Clay Flint		
Patcham Fawcett B Ph 84 (Greatorex 1997, 3-5)	Hut 1 lc	500mm diam	73 pieces weighing 2595g	charcoal	Yes			5 different types of charcoal

Site Context No/ Type	**Location**	**Size**	**Amount of FCF. Number, Weight +Av.**	**Charcoal/ burning**	**Bone**	**Other finds**	**Poss. other hearth features**	**Notes**
Patcham Fawcett B ph 94 (Greatorex 1997, 3-5)	Hut 1 c	300mm diam	49 pieces Weighing 4696g	Charcoal	Yes			3 different types of charcoal
Patcham Fawcett B Ph17 (Greatorex 1997, 3-5)	Hut 1 Ent	600mm diam	89 pieces weighing 1272g		Yes			
Patcham Fawcett B Hearth (Greatorex 1997, 13)	15m west of hut 2	1200mm diam 34mm deep	5007 pieces Weighing 183030g	Charcoal	Yes	Stone		4 different types charcoal
Plumpton Plain A Hole 1 (Holleyman and Curwen 1935, 23)	Enc 3 Cutting1 10m east of hut I cutting 11	450mm diam at top 300mm at base 300mm deep	60	Charcoal				Basin shaped
Plump Plain A Hole 10 (Holleyman and Curwen 1935, 23)	Enc 3 C11 Just outside house on west side	250mm diam top 110mm base 50mm	Great many			Sandstone Pot		Bowl shaped
Varley Halls (Greig 1997, 13-14)	Hut 1 contxt 129 Central							

Key:
LC= Left centre LF= Left front LB= Left back L= Left
RC= Right centre RF= Right front RB = Right back R=Right
C= Centre CF=Centre forward CB=Centre back S=Spread

Centrally placed features

There are seven centrally placed features with strong evidence of use as hearths. A further three are described by the excavator as possible fire-pits, four are undefined by their excavators but are possible due to their position and eight described by their excavators as central multiple postholes. Seven of these eight are from Itford Hill. The problem with the last category is that the flint packing of the posthole is similar to the flint surround of a hearth. These hearth or posthole features all come from principal rather than secondary structures, which are larger and therefore more likely to have central support posts but also more likely to have hearths.

Six of the above 11 sites have at least one centrally placed hearth, namely Amberly Mount, Black Patch 77-9, Cock Hill, Downsview, Mile Oak and Patcham Fawcett B; whilst another two, Itford Hill and Varley Halls, could have done. Given the above data and the evidence from Black Patch 2005-6, centrally placed hearths in huts were common on the Sussex Downs in the Later Bronze Age.

Perimeter features

The evidence for ovens is less explicit. There are six probable ovens. These come from five of the six sites mentioned above as having central hearths, plus Plumpton Plain. Whilst internal ovens were used, there is evidence external hearths might also have been used at Charleston Brow, Downsview, Mile Oak, Patcham Fawcett A and B and Plumpton Plain. The reason for the choice of internal or external is not immediately obvious at the moment.

Possible Ritual Features

Burnt Mounds

There are three large collections of fire-cracked flints known on the Sussex Downs. These are listed in Table 6.8

There are several similarities between these features. All are on the northern edge of their sites and all are larger sites or part of a cluster of sites. There is very little evidence for cooking, suggesting that the flints were heated elsewhere. Given that these large collections of fire-cracked flint do not appear on most sites it must be assumed they were constructed for a reason. Explanations given for similar piles of burnt flint elsewhere in West Sussex on the coastal plain, are mainly for heating water, for communal feasting or bathing. However, these sites; Sompting, West Sussex, Ferrring, West Sussex and Bilsham, West Sussex, are usually on the periphery of settlement sites close to water which appears to form a barrier between the settlement and the site (Dunkin 2001, 261-262).

Table 6.8 Possible Burnt Mounds. The contents are taken from the excavators published texts

Site	Location	Size	Contents	Notes
Itford Hill (Burstow G.P. and Holleyman, G.A. 1957, 172-3)	Cutting II just south of northern bank 5m west of enc III	Long and narrow irregular1-2m wide 15m long 2 shallow depressions at either end	Many thousand pieces of burnt flint	Flints especially thick over two depressions
New Barn Down (Curwen E.C. 1934. 145-9)	Cutting V In bank parallel to it. North side of easterly facing entrance	Irregular shaped pit	2000 calcined flints plus fragments Little charcoal 8 irregularly placed postholes just on north Pot Few scraps of animal bone pointed bone tool stone (quern fragment)	
Plumpton Plain A (Burstow G.P. and Holleyman G.A. 1957, 26-7)	Enclosure IV Cutting IV Under bank at right-angles to it. North side of easterly facing entrance	4100mm x 1800mm x 300mm	Large number of calcined flint, little charcoal 7 boulders of sandstone unmarked Pot. Flint	

The burnt mound site at Potlands Farm, also in West Sussex, would, according to the excavator Stevens, have been flooded at certain times of the year and therefore could not have been a permanent site (Stevens 1997, 68-9). The lack of associated artefacts and regular format make it hard to identify the activities associated with the Downland sites. Their size implies community activities and they may have been used for different purposes. Their appearance could imply a ritual and/or political motive for the spreads by drawing attention/people to their sites. At Plumpton Plain A, its later disappearance under an earthen bank could possibly have denoted decommissioning by subsequent authorities.

Depositions of fire-cracked flint

Analysis of the same 58 huts used for pottery distributions showed that only half as many constructional postholes contained fire-cracked flint as opposed to pottery. There was no real preference as to area. Only one third as many internal postholes contained fire-cracked flint as well as pottery. A total of 39 hut floors contained fire-cracked flint spreads, as opposed to 33 that contained pottery spreads. A third of the number of internal pits contained fire-cracked flint as those that contained pottery. These were placed either centrally or at the front of the hut, rather than at the back, where a large percentage of pottery containing pits were located.

There are a number of discrete spreads of fire-cracked flint in the centre of huts which are often associated with large amounts of pottery. It is possible that they may have been used in unison for some purpose in the centre of the house. The pottery is usually made from medium coarse fabric generally used for 'everyday ware'.

There are 13 such associations in the above analysis. Seager Thomas (forthcoming) cites finds of whole or nearly whole pots containing fire-cracked flints and other items in the South of England. Having experimented with the different fissuring and colouring on the surface of fire-cracked flint caused by differential heating and methods of cooling (wet or dry), he is convinced that the fire-cracked flint was deliberately and neatly put into the pots for ritual reasons. There is a connection here between a perceived functional use giving rise to a ritual use.

Layer 2271 from Hut A at Black Patch contains a pottery spread as well as one of fire-cracked flint, in close proximity to one another, on the hut floor. A Neolithic flint knife, bone and a piece of loom weight are also nearby. It is also interesting to note how clean the area under the flint tumble was.

At Patcham Fawcett, a pot containing fire-cracked flint also contained several animal bones, three flint flakes, two sarsen stones weighing 1.2kg, charcoal and carbonized seed. All of these are either ingredients or connected with cooking and food preparation and, as such, could well represent an individual's responsibilities and skills during their life (in this case a person who prepared and cooked the group's food) and is a funerary deposition at their death. Fire-cracked flint and grass seed are associated with death (Brück 2001). The repeated re-occurrence of this patterning of artefacts implies deliberate human placement rather than post depositional processes.

6.3.12 Ritual properties of fire-cracked flint

Fire-cracked flint is closely associated not only with cremated bone (Brück 1999); but also with fire, rites of passage, feasting, ancestors, shamanism and the spirit and ghost world (Melody 1995; Odgaard 2001, 25-30; 2007, 61-84; Oosten 2001,17-24).

The large amount of burnt flint in the topsoil of most sites infers ongoing usage of fire-cracked flint at these sites. If they are being used only sporadically, as short term shelters for nomadic shepherds whose sheep are grazing the Downs, it would make a great deal of sense to stockpile fire-cracked flint at these locations rather than carry it around. This would not only show ancestral rights and create a ready store for use but might also deter evil spirits (Melody 1995, 276). Circles of flint still surround modern buildings (such as The Crystal Shop at Littlington, East Sussex) to keep out evil spirits.

6.3.13 Conclusion

This chapter started by showing the mechanisms of hearths and their uses. This was followed by an inventory of the distribution of fire-cracked flint on various Downland sites showing 12 centrally positioned features that could be hearths. Hearth investigations on features containing either fire-cracked flint or charcoal indicated that 22 centrally placed features could be hearths. Six of the 11 sites investigated show evidence for centrally placed hearths, whilst another two are possibilities. This indicates that hearths placed centrally in huts were common on Later Bronze Age Sussex Downland sites.

Harding (2007, 49) stresses the importance of the hearth ethnographically in Malaysia where the hearth is central to living and is 'the heart of the house'. Its transformative abilities on raw materials into edible substances are associated with childbirth by converting raw materials from outside the house into life giving matter.

He also mentions resistance to attempts to introduce stoves to developing countries. In Ghana the three stone fireplaces represents family unity, whilst in Nepal villagers believe that a spirit dwells in the hearth (Harding 2007).

Odgaard (2007, 79) states she had found in an ethnographic survey of religious ideas connected to hearths that different cultures in Siberia, Canada, Northern Scandinavia and Europe see the fireplace as a gate to other worlds. The god of the hearth is often a woman who guards the family and the clan and who assists in childbirth. It is also the place where offerings to ancestors and spirits for help can be made (*ibid.* 62-84).

Hearths are obviously important and their placing is both practically and culturally significant.

Oswald's (1997, 87-95) work on the doorway orientation of roundhouses shows a marked change from the Middle Bronze Age to the Iron Age.

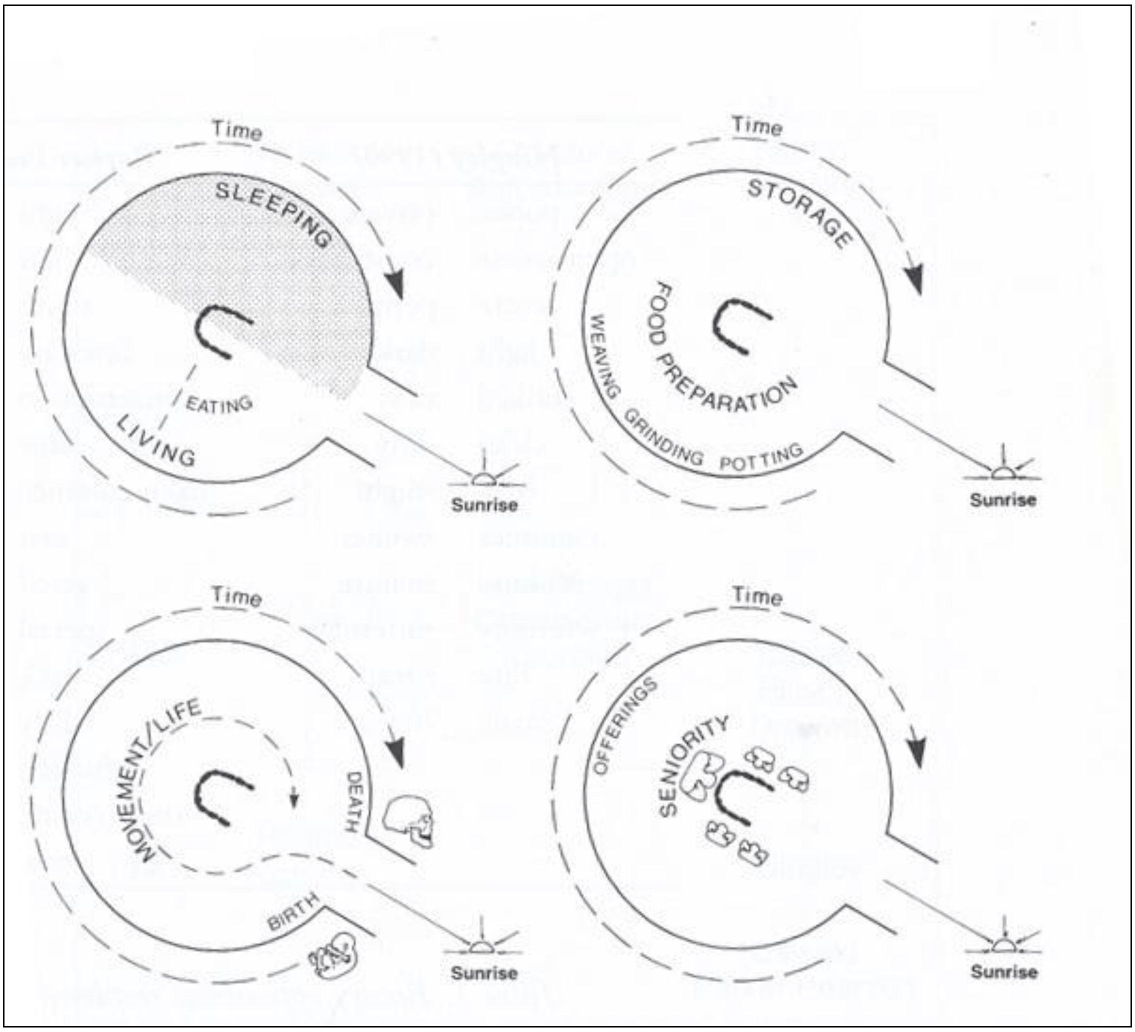


Fig. 6.23 Showing notional division of roundhouse. After Pope 2007 fig. 1, p205: Parker Pearson 1999, fig. 6.3

Middle Bronze Age houses tend to have doorways in the south-east to south quadrant. He is of the opinion that this is because they are built on the southern side of a south facing spur of land and are therefore topographically placed. Later Bronze and Iron Age roundhouses have their doorways orientated between north-east and south-east, apparently respecting the midwinter and midsummer sunrise. Parker Pearson (1996, 117-32) is of the opinion that the architecture and use of a domestic house can be indicative as a metaphor for the lifestyle and beliefs (cosmology) of a society.

He saw that some roundhouses of the Later Bronze Age were symmetrical and most faced the direction of the early morning sun. This suggested to him a cosmology represented by the passage of time with the sun revolving around the hut representing the cycle of life and death. Based on artefacts and internal features, activity areas have been identified as well as gender-orientated hut use. Men's activities have been found to be at the front of the hut in the light, whilst women's are at the back (Parker Pearson 1996, 117-32).

This dualistic approach has several problems when applied to Later Bronze Age Britain. Most of the ethnographic comparisons used by Parker Pearson are in hotter temperate and equatorial regions where there is not such a large discrepancy in daylight hours between winter and summer. He neglects the importance of hearths in more northerly climes like Britain. Studies such as this thesis, have shown that there is no discernable preferred location for activities in Bronze Age houses. Centrally placed hearths would illuminate the dead side of the house as well as the living. Moreover if they are centrally situated, all parts of the hut share the benefits equally, as do the inhabitants, be they human, ancestral or spiritual. The assumption of gender driven activities so soon after permanent settlement is also difficult to accept.

There is an alternative cosmology hinted at by Barrett (1994, 93) and described more fully by Williams (2000) in an attempt to merge land tenure and agricultural output into the duality cosmology proposed above. Williams points out his work is done on a European basis and that cosmologies grow and change over a period of time so not all of the following will be universal. He states that ground preparation is symbolized by axe deposition or construction of cairns of cleared stones resembling burial mounds being constructed, thus claiming the land for the living rather than the dead. Depositions such as axes and ard shares in water represent its importance in growing crops. The cyclical nature of the sun is depicted by the alignment of sunrise either at the midwinter solstice or spring equinox on house entrances. Harvesting the crop is represented by the deposition of flint or metal sickles. At this stage he subsumes the duality cosmology into the agricultural cosmology highlighting the importance of fire as an agent of change, suggesting depositions of burnt grain as a metaphor for cremated bone and the burning of a house as marking the succession of ownership. This allusion to change and death seems to argue against continuity of ownership and permanence. Burnt grain found in internal pits is just as likely to be a deposition for future fertility. The indications at Black Patch where some postholes show signs of burning that has not been shown to be functional, together with the placing of possible funerary depositions, could mean the hut is being decommissioned. This could either be at the end of a families or kin group's occupation. The hut platform which would retain its relevance to the block of land could either be given to another member of the family or kin group or as a gift to another clan or group.

The central hearth with its nurturing, in the form of heat and light and the centre for other activities particularly in winter, can be seen as a central point around which the differing points in the landscape can be noted like sunrise and sunset marking the start of various agricultural activities (a solar calendar). It also marks permanence and control over natural forces. Smoke rising would be a beacon for those returning home.

Pope (2007) has a slightly different approach to the above in that she sees it as a core/periphery cosmology. This idea can also be accommodated as the valley tops crowned by barrows surrounding the settlement sites and field system could well represent the boundaries of the core area, outside of which is the periphery. The idea that the hut is the core and the area around the hut is the periphery, thus defining personal space, is also a possibility.

The evidence from Black Patch concerning site longevity, apparent structured deposition usually pertaining to fertility, the lack of any evidence of gender based activity areas and a surrounding topography suitable for use as an astronomical clock, points to an agricultural cosmology based on a central hearth rather that one based on pairs of opposites.

6.4 Stone

6.4.1 Introduction

This section deals with the finds of foreign stone on Sussex sites. This stone is usually sourced off-site and is therefore referred to as foreign stone. The primary use for most of the stone types, other than beach pebbles, is as quern stones for milling grain. They are also used along with flint in burnt stone technology. The question of the use of tertiary beach pebbles, ubiquitous across the Downs is open to debate. Unfortunately, some earlier site reports do not include all foreign stones from the site and often lump all varieties under the heading 'sandstone'. Inevitably this is an incomplete survey.

6.4.2 Distribution

The majority of stones found are types of sandstone which make good quality querns and also are very efficient in burnt stone technology. Sarsen is also a type of sandstone. Most types are fairly ubiquitous and are therefore hard to provenance. However the occurrence of Horsham stone at both Cock Hill and Amberley Mount, sites placed approximately five kilometres apart, is probably indicative of local distribution. Barber states that much of the geological material was from the Weald to the north and the sole piece of limestone found, used in metalworking as a mould at Downsview, would have travelled at least 150 km from the west, this being the nearest source (Barber 2002, 186-8). The use of mostly local and/or semi-local stone resources shows the presence of local exchange or movement in the Middle Bronze Age (Seager Thomas 1997, 47). This is illustrated by Table 6.9, stone finds on Middle Bronze Age and Late Bronze Age Sussex Downland sites. The Mayen lava found at Black Patch is an example of long distance travel, having come from the Eifel district of Germany, as is the piece of Cornish granite found at Varley Halls (Table 6.9).

Unfortunately, some earlier site reports do not include all foreign stones from the site and “no” is an indicative of “not mentioned” rather than “not present” (Table 6.10).

Quite often, the fact that the stones were burnt is also ignored. This makes hearth analysis hard for stones other than flint. The following Table 6.10 shows the location of foreign stone finds in features from 58 huts as defined in the published site report. As such it has the same provisos mentioned in the introduction to this section (6.4.1 Introduction).

6.4.3 Conclusion

The movement of stone across the Downs and further afield shows that either there was organized trade or access to sources of stone. In both cases this would indicate co-operation between sites. Some stone was possibly part of gift exchange.

There is no discernable pattern in the positioning of stone artefacts in excavated Later Bronze Age roundhouses.

Table 6.9 Stone Finds on M.B.A. and L.B.A Sussex Downland sites

Site	Tert. Beach pebbles	Sarsen	Unspecified Sandstone	Sandstone ferruginous	Greensand Un= unspecified U=upper L=lower	Horsham stone	Calcite	Quartzite	Malmstone	Other
Amberley Mount (Ratcliffe-Densham and Ratcliffe-Densham 1966, 21-23)	No	Y	Y	Y	Y L	Y	No	No	No	
Black Patch 05/06 (Tapper in prep.)	Y	Y	Y	Y	Y Un	No	Y	No	No	
Black Patch HP1 (Drewett 1982, 377-397)	Y	Y	No	No	No	No	No	No	No	
Black Patch HP4 (Drewett 1982, 377-397)	Y	No	Y	Y	Y Un	No	No	Y	No	Mayen Lava
Black Patch (Ratcliffe-Densham and Ratcliffe-Densham 1953, 21-3	Y	No	No	No	No	No	No	No	No	
Charleston Brow (Parsons and Curwen 1933, 164-180)	Y	No	No	No	Y L	No	No	Y	No	
Cock Hill (Ratcliffe-Densham and Ratcliffe-Densham 1961, 101)	No	Y	Y	No	Y L	Y	No	No	No	
Downs View (Barber 2002, 186-8)	Y	Y	Y	Y	Y U	No	Y	Y	No	
Itford Hill (Burstow and Holleyman 1957, 202-4)	Y	No	Y	Y	Y L	No	No	No	No	

Site	Tert. Beach pebbles	Sarsen	Unspecified Sandstone	Sandstone ferruginous	Greensand Un= unspecified U=upper L=lower	Horsham stone	Calcite	Quartzite	Malmstone	Other
Kingly Vale (Curwen 1934a, 167)	No	No	No	Y	Y L	No	No	No	No	
Mile Oak (Laughlin *et al.* 2002, 22-3)	No	Y	Y	No	Y U	No	No	No	Y	
New Barn Down (Curwen 1934b, 214-15)	Y	No	No	Y	Y	No	No	No	No	
Patcham Fawcett A (Barber 1993, 29)	No	Y	No	No	Y U	No	No	No	No	
Patcham Fawcett B (Barber 1997, 24)	Y	Y	No	No	No	No	No	Y	No	
Plumpton Plain (Holeyman and Curwen 1935)	Y	No	Y	No	No	No	No	Y	No	
Varley Halls (Barber 1997, 51)	No	Y	No	Y	No	No	No	Y	No	Cornish Granite

Table 6.10 The location of foreign stone finds

Site	Constuct. Ph	Internal Ph	Floor	Internal Pit	External Pit
Amberly Mt (Ratcliffe-Densham and Ratcliffe-Densham 1966, 21-23)	No	1LF	1S	1CF	No
Black Patch 2005-6 (Tappe in prep)	2F	3C	2C	2B	No
Black Patch HP1 (Drewett 1982,377-397)	1L	No	No	1LB	1P 1C
Black Patch HP4 (Drewett 1982, 377-397)	3L 2R 3F	6C 2L1R	4S 2C	2F 3B 1C	2P
Blackpatch (Ratcliffe-Densham and Ratcliffe-Densham 1953, 21-23)	All 4R 5 L	No	1S	1LF	No
Charleston Brow (Parsons and Curwen 1933, 164-180)	No	No	S	No	3
Cock Hill (Ratcliffe-Densham and Ratcliffe-Densham 1961, 101)	12 U	No	No	2RB	Many 1P
Downsview (Barber 2002 186-8)	2L 2R 4F	1C	1S	1RB 2C 1CB	8
Ford	No	No	No	No	24P 15 PH
Itford Hill (Burstow and Holleyman 1957, 202-4)	1R 1L 1F	No	6S	1R 2B	No
Mile Oak (Laughlin *et al.* 2002, 22-3)	1L 4F	3C 1L	2S 2C	1C 3L 1R	No
Patcham Fawcett A (Barber 1993, 29)	No	No	No	No	6
Patcham Fawcett B (Barber 1997, 24)	2L 2R 1F	1L 2C	No	No	15
Plumpton Plain (Holeyman and Curwen 1935)	2R 2L 2C	4C 3R	4S	No	No
Varley Halls (Barber 1997, 51)	1L 2R	No	No	No	2

Site	Constuct. Ph	Internal Ph	Floor	Internal Pit	External Pit
Totals	17L 15 R 15F	19C 5L 4R 1LF	6C 27 S	3L 2R 4C 4F 7B 1CB 1CF 3RB	
Total Huts	58				

Key:
LC= Left centre LF= Left front LB= Left back L= Left
RC= Right centre RF= Right front RB = Right back R=Right
C= Centre CF=Centre forward CB=Centre back S=spread

6.5 Bronze

6.5.1 Introduction

The study of bronze distribution might seem anomalous to this study as there was no bronze at the Black Patch 2005-06 excavation. However its deposition will hopefully shed some light on my third research question- *'What can we learn about the life of the people associated with the settlements?'* Bronze distribution is confined to hoard sites and settlement sites. There are 49 hoard sites (Figure 6.24) compared with 38 settlement sites in Sussex.

Hoard site details were taken from the County HERs. They are defined as depositions of two or more pieces of bronze deposited in a close relationship to one another. In this way I hope to eliminate individual lost pieces from the study Bronze artefacts are still relatively rare and those found in settlements even rarer. No other site compares with the bronze assemblage found on Hut platform 4 at Black Patch. Hoards will be analysed before settlement sites to identify the broad corpus of Bronze Age metalwork in Sussex. Contents and location will then be discussed before settlement site assemblages will be compared both between themselves and with the hoards.

6.5.2 Bronze Age Hoards

Each of the 49 hoards has been dated (wherever possible) and categorized by content and association with either settlement sites or other hoards in the relevant HER. The periods used are unknown, Early Bronze Age, Middle Bronze Age and Late Bronze Age. These are very general categories but hoards often have artefacts of different ages such as a flanged axe from the Sidlesham hoard which is at least five hundred years

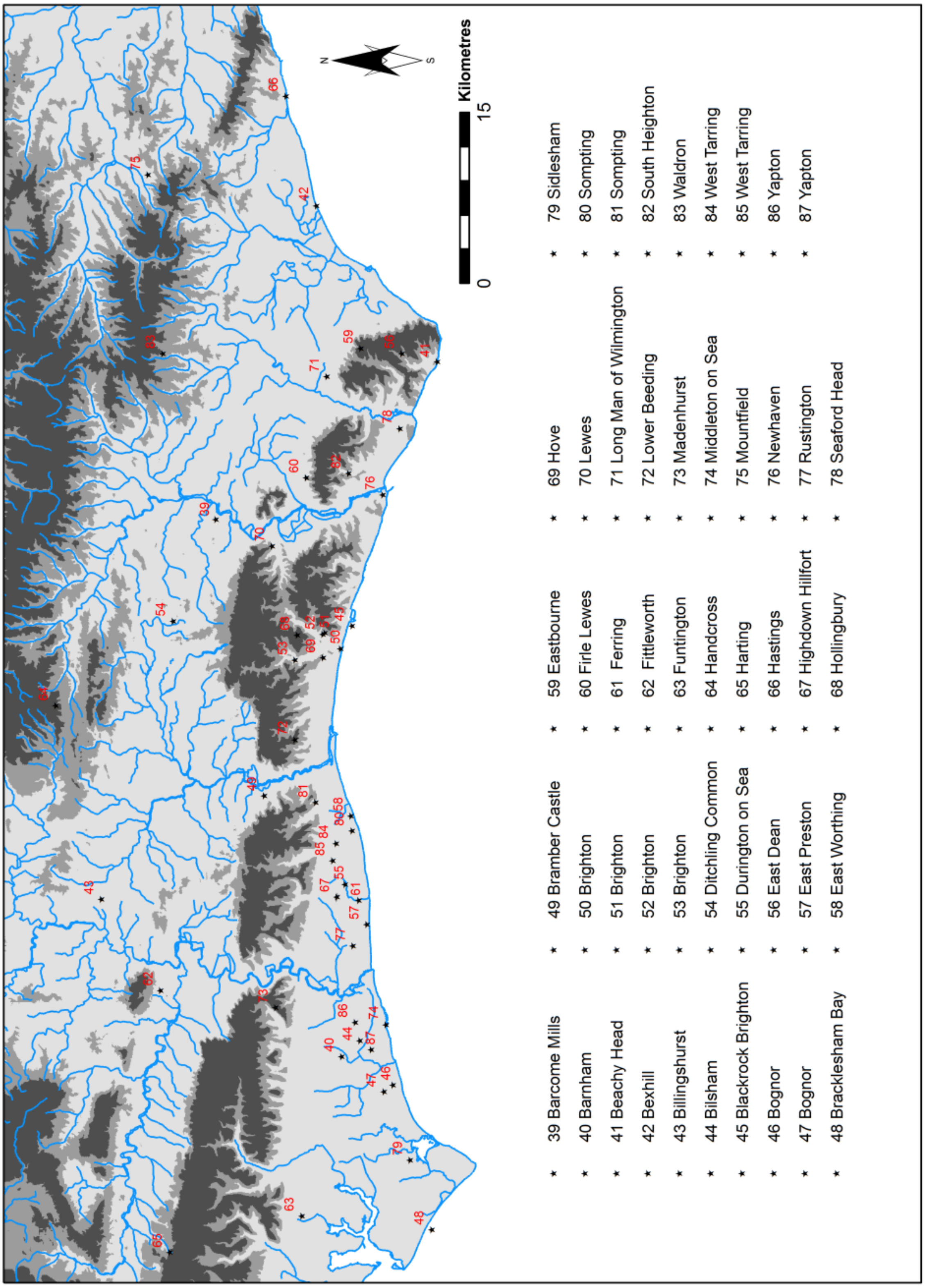


Fig. 6.24 Distribution of Bronze Hoard sites in Sussex. Vol 2. Appendix. Source County HERs. Map D. Lea, 'Contains Ordnance Survey data © Crown copyright and database right 2010'

older than other artefacts found in the hoard Curwen (1954, 197). It is impossible to know if the older artefacts were curated above or below ground.

Contents have been categorized into the following groups: Tools, Weapons, Ornaments, Miscellaneous Items and Unformed. The later includes finds, described as cakes, lumps and molten metal sheets.

Association is described either by cluster in the case of other hoards or by site name in the case of settlement site.

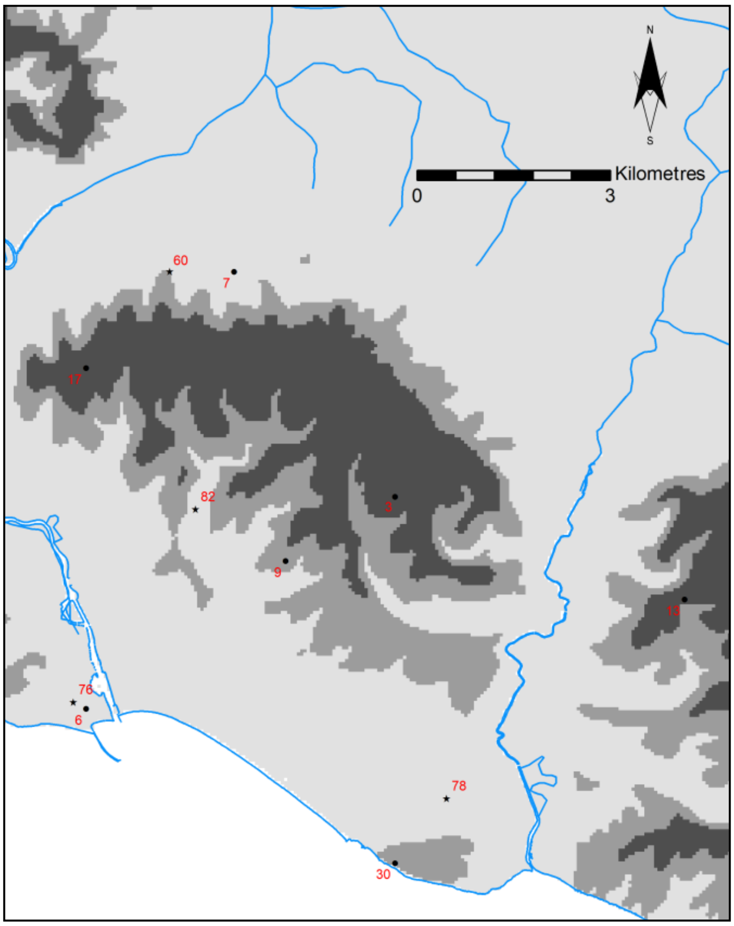


Fig. 6.25 Bronze Age Settlements and Hoard Sites in the near vicinity of Black Patch

Key: 3 Black Patch 6 Castle Hill 7 Charleston Brow 9 Denton Hill 13 Fore Down
17 Itford Hill 30 Seaford Head 60 Firle 76 Newhaven 78 Seaford Head
82 South Heighton

Of the 49 hoards recorded in the HER, four are undated because the contents have been lost before recording. Another three are believed to be Early Bronze Age in date. All of these are located near the sea. One of these, at Eastbourne, contained only tools.

Bronze Age Hoards in the Black Patch area

Three of the 12 Middle Bronze Age hoards lie close to Black Patch (Table 6.11 and Figure 6.25). The hoard at East Dean contained only ornaments, the one at Lewes contained nine pieces of molten bronze and the hoard at South Heighton contained ornaments and a hollow boss as well as tools. A fragment of an axe was analysed and found to be 99.8% copper indicating curation for many centuries (Grinsell 1931, 41-42). Three of the 12 hoards contained weapons.

All but one (Handcross) of the Late Bronze Age hoards contained tools and nine sites contained weapons. Four of the nine sites containing weapons are close to Black Patch. These are at Firle, Beachy Head, The Long Man of Wilmington and Newhaven. The other five sites are spread throughout the county.

Table 6.11 Hoard sites from the Black Patch area (After Curwen 1954, 213-16 checked against County Historic and Environmental Records). Geology and Topography (Tapper 2002)

Hoard Site	Grid Ref.	Geology	Topography	Finds	Nearby Sites	Other comments
East Dean M.B.A. O	TV 569 986	Dry valley	In valley bottom running East/West. Close to modern footpath and South Downs Way	2 Sussex loops 3ring headed pins		
Lewes. M.B.A. F	TQ 40 10	Upper Chalk	Flat plain on top of Downs overlooked from the South.	9 pieces of molten bronze		Found with pottery, Timber, Wattle and daub.
South Heighton M.B.A. T O M	TQ 464 033	Lower chalk close to head	Valley bottom running South-West/ North-East. Very open and overlooked.	Fragment of socketed axe, bronze ring, bronze hollow boss Copper axe		Axe composed of 99.8% copper

Hoard Site	Grid Ref.	Geology	Topography	Finds	Nearby Sites	Other comments
Firle L.B.A T W	TQ 46 07	Head, silty loams	Dead-end valley Close to spring and the South Downs Way	1 winged axe 1socketed axe, 1socketed Spearhead		
Beachy Head L.B.A T O W	TV 562 955	Upper Chalk. Close to dry valleys	Open Downland	4 gold bracelets 3 looped axes 2 socketed axes 1 carps tongue sword	Belle Tout earthworks	
Long Man of Wilmington L.B.A T W M	TQ 549 052	Gault Clay	Flat plain overlooked by the Downs to the South.	17 looped socketed axes 13 looped palstaves 2spear head fragments 1 complete mould 14lb		
Newhaven L.B.A T W	TQ 45 00	Built up area	Hill overlooking sea and River Ouse	1 socketed winged axe 1 leaf sword 2 socketed Gauges 1 tanged chisel 1 tanged knife 1 socket knife 1 awl	Castle Hill	Also contained Cap for handle of knife and set of carpenters tools(Curwen 1954, 217)

Key; T= Tools W=Weapons O=Ornaments M= Miscellaneous

Although this is only a small number of bronze artefacts, certain facts are evident. First, the fact that all the local L.B.A sites contain weapons, as opposed to none in the M.B.A., shows an increase in the level of interest in weaponry in this area during the L.B.A, possibly more than in other areas of Sussex. There are only five sites out of 28 L.B.A in the rest of Sussex that contain weapons. The amount of bronze and gold at Beachy Head shows that the area was wealthy and implies that more economic activity was occurring than just subsistence farming. With one exception, the hoard at Newhaven, the only tools deposited are palstaves and axes. This is true not only in the Black Patch area but also across Sussex. The most numerous find on residential sites is the awl (five having been found). It is represented once in Table 6.11 at Newhaven but not in any other part of Sussex. The Newhaven hoard is the only one to contain several other carpenter's tools (Curwen 1954, 217). The reason for this is not size, as smaller articles have been found. Being so close to the settlement site at Castle Hill (400m distant) this could be a burial deposit for someone who was a carpenter in life. Alternatively the carpenter could have buried it in turbulent times. However if the latter is the case, why bury the sword (Table 6.11)?

All four L.B.A sites are in areas that are overlooked either because they are in a valley or close to a settlement site inferring that secrecy was not an issue. Three of the sites are near water, an important factor in agriculture and the other, The Long Man of Wilmington, is close to Neolithic and Early Bronze Age Barrows. It is possible to argue that they are structured deposits possibly referring to an individual's death (Needham 1997, 58).

Other Bronze Age Hoard sites in Sussex

Looking at the distribution of the hoards it is quite obvious that quite a few are placed close to either the source of a river or close to the river north of the settlement (Figure 6.24). From west to east the River Arun has the Lower Beeding hoard near its source and Fittleworth is near its convergence with the River Rother. The River Adur rises in its western branch at Billingshurst and runs close to Bramber Castle. The source of the River Ouse is close to Handcross and the river passes close to Barcombe Mills. The Cuckmere rises at Waldron and Mountfield is close to the source of the River Line.

This is a mixture of sites varying between gold ornaments at Fittleworth and Mountfield to a large number of spearheads at Bramber Castle to only six fragments from three axes at Lower Beeding. They have one thing in common, as far as composition is concerned they only contain one type of bronze ornament, tool or weapon.

There are a large number of hoards on the coastal plain, mostly close to water. Their distribution does not however match the modern developed area of the plain. There are only two settlement sites in the whole of Sussex closer than one kilometre to hoards (Figure 6.26). These are Newhaven and Rustington B.

The location of hoards near water and particularly rivers is of obvious importance and is probably related to the importance of water in agriculture. The lack of proximity of hoards to permanent settlement sites is intriguing. This possibly indicates a continuance of a nomadic lifestyle for some of the population of the coastal plain in the Later Bronze Age.

There is also a major change in the content of the hoards between the Middle and Late Bronze Ages. Eight of the 12 Middle Bronze Age hoards contain ornaments as opposed to four out of 27 in the Late Bronze Age. Five of the 12 Middle Bronze Age sites contain tools whereas all the Late Bronze Age sites do (Tapper 2002). This infers a move from personal adornment to work and possible skill sets. However it is also possible that wealth was measured in acquisition of tools like axes and palstaves.

6.5.3 Bronze Artefacts at Black Patch

Three of the five huts on Hut Platform 4 contained bronze artefacts (Drewett 1982, 361). No other finds of bronze have been made there at either of the two hut platforms or enclosures that have been excavated. The metalwork is from the Taunton-Penard period of the Middle Bronze Age 1330BC- 920BC (Needham 1997, 61-2). Hut 1 contained two spiral finger rings. These rings are more usually found in hoards dating to the Middle Bronze Age. Hoards found at Black Rock in Brighton, Hollingbury and Sompting near Park Brow contained similar rings. This is a large distribution area. These three sites also contained Sussex Loops, another form of personal ornament (Tapper 2002). Another site to contain a similar form of spiral ring is the nearby L.B.A site at South Heighton. The finding of two similar spiral rings close together but at different site types is interesting. The dating of the find at Black Patch is based on a radiocarbon date from the grain found in Hut 3 in the same pit as a bronze razor. This is radiocarbon date HAR -2940, 3020 +/- 70 or 1430 to 1050 BC (95% confidence). The

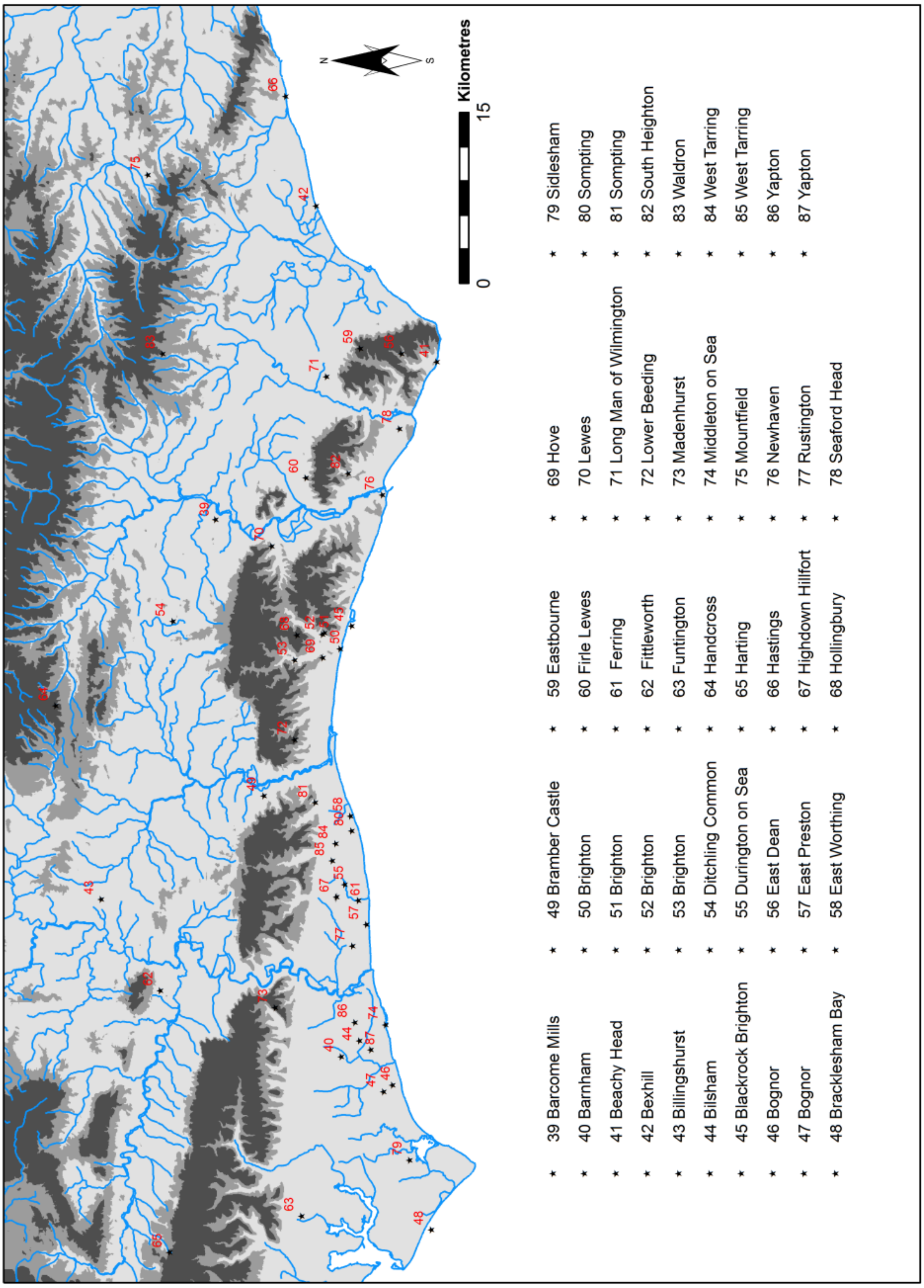


Fig. 6.26 Shows all the Bronze Age settlement and hoard sites in Sussex. Vol 2. Appendix. Source county HERs. Map D. Lea, 'Contains Ordnance Survey data © Crown copyright and database right 2010

ring was found in the same hoard as a broad butt flat axe with a copper content of 99.9%. This is an indication of early metalwork. On the Continent similar copper axes are dated to the Late Neolithic rather than Early Bronze Age (Briton 1963, 258). A similar styled axe was dated to a range of 2900 to 2300BC (95% confidence) (Needham 1997, 72). The curation of the copper axe reveals a possible wish to show longevity of association with this area of land or at the very least an old established group. The rings are from the Taunton tradition. The end of this period is estimated to be between 160 years earlier and 270 years later than the start of the Penard, giving a 56% chance of overlap. The rings are therefore probably earlier than the hut in which they were found (Needham 1997, 79). Black Patch is the only settlement site to date on which this style of ring is found. The others are all hoards. If there is a connection it might be that they are both closing deposits, one of a person, the other of a hut. It is worth noting that there are fewer spiral rings than Sussex Loops in Sussex. Whilst no bronze was found in Hut 2, Hut 3 was associated with the most bronze objects.

Firstly a Class II razor with a bifid blade was found in the same pit as one of the grain depositions. For this reason, it was included in Needham (1996). It was considered to be later Middle Bronze Age, even though it could not be attributed to any particular tradition and is dated to 3020+/- 70 BP; 1430-1050 BC (95% confidence) (Needham *et al.* 1997, 90). A similar razor was found at Quoykea Moss, Orkney together with part of a hazel sheath. According to Piggott, such razors were introduced from the Continent and are never found in burial situations but can be found in hoards (Piggott 1948). Whilst razors of this type have been shown by modern experimentation to be perfectly adequate for shaving, they could also be used for cutting hair and nails, as well as used as craft knives (Barber 2003, 137).

Secondly, a broad double-edged flat bronze knife with remains of a short flat rectangular tang of late Middle Bronze Age type was also found. The only knife found in a hoard comes from the Late Bronze Age find at Yapton. This knife is far too small to be used as a weapon.

Lastly, two bronze awl/tracers which are round-sectioned at one end and rectangular at the other, both of which have a chisel edge, were present.

Although the first artefact is designated as a razor, its use is far from being certain. As stated above it could be a craft knife. This would put it to the same category of use as the other items in the hut: manufacturing tools. This would tie in with the large number of complete loom weights found in the hut.

Hut 4 contained two bronze artefacts: a narrow two-edged bronze blade, possibly a rapier, located at the back of the hut and a solid pointed object, possibly the broken end of a spear ferule. Obviously, if the interpretations are right, they are both used for military or defensive purposes.

The only whetstones found on site were in Huts 3 and 4. This adds to Drewett's argument that the finds on Hut platform 4 were *in situ* (Drewett, 1982, 328-38). However, *in situ*, in this case, covers artefacts left where they were stored or used, or deliberate deposition at the time of the abandonment/decommissioning of the hut. There were no signs of metal working from any excavated context across the entire site (Drewett 1982, 321-61).

6.5.4 Comparison with other domestic Later Bronze Age sites

Using Table 6.12 comparisons with other sites will be made.

Table 6.12 Bronze finds in Domestic Locations in Sussex

Site	Type	Age	Notes/additional finds
Black Patch HP4 H1	2 wire coiled finger rims	M.B.A.	Possibly older than hut see text above
Black Patch HP4 H3	Razor bifid blade?	Late M.B.A.	Class II razor (Rowlands 1976, 47-48)
Black Patch HP4 H3	Tanged knife with broad double-edge.	Late M.B.A.	Fragments from 2 whet stones found in Hut3 (Drewett 1982, 361-77)
Black Patch HP4 H3	2 awl/tracers one end round sectioned other square	Late M.B.A.	(Drewett 1982, 361)
Black Patch HP4 H4	Solid pointed object	Late M.B.A.	Possibly broken end of spear ferule. Fragments from 3 whet stones found in hut3 (Drewett 1982, 361)
Black Patch HP4 H4	Narrow two-edged blade	Late M.B.A.	Possibly Rapier (Drewett 1982, 361)
Charleston Brow Southern Site Hut/Living Area	Small segment of a sword	L.B.A	(Parsons and Curwen 1933, 168-9)
Cock Hill Ditch	Small piece of bronze strip	L.B.A	(Ratcliffe-Densham and Ratcliffe-Densham 1961, 83)
Downsview Ditch	Awl	BA	Needham 2002, 183)
Downsview Terrace 4003	Tracer/awl	BA	Needham 2002, 183) Found with whetstone made of a beige siltstone (Humphrey 2002, 185)

Site	Type	Age	Notes/additional finds
Downsview Terrace 2262	Decorated strip and two sheet-like fragments	BA	Strip possibly post medieval Needham, 2002, 183)
Kingston Buci Pit	Large strip of bronze	L.B.A	(Curwen 1931, 216)
Mile Oak. Trench K topsoil	Lead Alloy ring Copper Alloy pin Copper Alloy Tweezer frag Copper Alloy Ring Copper Alloy Stud head. Copper Alloy sword blade fragment 2 Copper Alloy sheet fragments 2 lead Alloy sheet fragments 1 Lead Alloy droplet	M.B.A. None BA None None BA None None None	All undated items are associated with metalworking (Wallis 2002, 54-56)
Mile Oak Trench K Mound III context 333	2 Copper Alloy sheet fragments.	None	,,
Mile Oak Trench J	1 Lead Alloy droplet	None	,,
Mile Oak	146 pieces of slag	L.B.A	(Wallis 2002, 54-56)
New Barn Down Cutting VIII Hut	Knife. Spear point	M.B.A.	(Curwen 1934, 141-2)
Plumpton Plain B Cutting VIII: Hut (B-C VIII)	Winged Axe segment Bronze Knife with flanged tang	L.B.A	(Curwen and Curwen 1935, 320)
Plumpton Plain A A-E 111 Cutting II Hole 7	Pointed ferule	BA	(Curwen and Curwen 1935, 320)
Rustington B	2 Axes.	1L.B.A 1M.B.A.	(Rudling 1990, 15)
Shinewater.	1 Reeve Hook(maple handle) 3 socketed axes 1 end –winged axe 1 Skin-paring knife. 1 bracelet 1 Tanged chisel / 2 beads of copper alloy 2 lead purse pendants 2 misc. lead objects.	L.B.A L.B.A L.B.A L.B.A L.B.A L.B.A L.B.A L.B.A L.B.A	1 socketed axe North Dutch/North-West German Zone (Needham 1995, 43-46)
Varley Halls Colluvium above Hut 1	1 Bronze Tracer Awl	M.B.A.	(Greig 1997, 47)

The nearest site to Black Patch to contain metal is at Charleston Brow, a site containing artefacts from the Late Bronze Age to the Romano-British period. Most of the metal work is iron from a later date but there is part of a Late Bronze Age sword in one of the huts. The large amount of metal, particularly iron waste and slag, together with Roman coins, shows that the site was used for metal-working into the Romano-British period. Cock Hill and Kingston Buci both contain strips of bronze; again one from Kingston Buci is possibly Roman. Copper alloy strips from Downsview are possibly medieval but it does have two awls dated to the Bronze Age and a mould for producing an ornament dated to the Middle Bronze Age.

The amount of copper and lead alloy ornaments, weapons and slag at the Late Bronze Age part of the Mile Oak site, mostly found in the topsoil, would indicate metal work was being produced on site.

Middle Bronze Age settlement sites at New Barn Down and Varley Halls both contained bronze objects. New Barn Down contained a spear point and a knife, Varley Halls an awl found in the top soil. At Plumpton Plain A the Middle Bronze Age site contained a pointed ferrule. The Late Bronze Age site, Plumpton Plain B, had a hut containing a winged axe segment and a bronze knife with a flanged tang.

The last site to contain metal work is the enigmatic site at Shinewater, located on former marshland some 12 kilometres east of Black Patch. Given its watery environment and the quality of its metal work, it is thought in the main to be a central hub for exchange and possibly a site of ritual deposition, although, interestingly, it contains no weapons but one axe appears to originate either in the northern Netherlands or north-western Germany (Needham 1995).

6.5.5 Conclusion

The amount of bronze items and whetstones found on Hut Platform 4 at Black Patch is unusually large for a residential site. Although the evidence is thin, the sheer amount and range of ornaments, tools and weapons in different huts and the location of whetstones - all point to an *in situ* (see above) assemblage of at least some artefact types on Hut Platform 4 at Black Patch.

If the bronze and whetstone assemblage is *in situ* then appearance of similar rings to those found in the South Heighton hoard with its earlier axe opens a couple of possibly interesting interpretations. Firstly if hoards were personal death depositions then the depositions at Black Patch could be abandonment depositions for the entire hut platform at the end of its use or solely for the abandonment of Hut 1. Secondly, the two sites could be related and the deposition at South Heighton was made by the (former) inhabitants of Black Patch at the time of its abandonment. The curated axe could possibly represent a long association with the land coming to an end. However the phased abandonment of the settlements would add credibility to Russell’s (1996, 33-8) view that Hut 1 is from a different phase of settlement to Huts 3 and 4. This period sees the increase of weaponry in hoards especially in the area around Black Patch. Increased unrest could be the reason the site was abandoned.

The siting of most hoards away from settlement sites but in open locations is particularly striking on the coastal plain, where either the sites have yet to be discovered or a large proportion of the population was nomadic.

Evidence for trade not only in metal but also in stone is evidenced by the oolitic whetstone found at Downsview. There is also evidence for manufacture of metalwork on sites from the L.B.A. Quite often, as at Charleston Brow this continues, probably intermittently, into the Romano-British period.

6.6 The Prehistoric Pottery

6.6.1 Introduction

Analysis of the Bronze Age pottery of Sussex has had four major contributors. They are in chronological order, Hawkes who examined and categorized the excavations in the first part of the 20th century, Ellison who gave her name to all but one Deverel-Rimbury form (Figure 6.27), Hamilton who distinguished M.B.A. pottery from L.B.A pottery and Seager Thomas who has reassessed previous workers output and updated it to current understandings.

This pottery section is based on an amalgam of their ideas. An updated Table 6.13 showing the distribution of Ellison types is indicative of how little pottery we actually have in Sussex from the Middle Bronze Age. Ellison types 1-10 are generally deemed to be M.B.A. with types 11-19 L.B.A. More L.B.A types have been found and they are generally named after their shape, for example convex jars, bipartite bowls. However only one new type of M.B.A. pottery has appeared shown in Table 6.13 as BU1 (Bucket Urn with applied, finger- printed ‘horse-shoe’ band). This has been found at three sites. These are Mile Oak, Downsview and Patcham Fawcett, which are very close together and so a distribution area has been postulated by Hamilton (2002, 49) with connection to northeast Essex from where the style appears to emanate. However it can be seen from Table 6.13 that most Ellison types are ubiquitous across East and West Sussex and would appear to show conservative values, whereas the diversity of types in the Late Bronze Age is seen as a sign of specialist potters with discrete distribution areas and the disappearance of the self-sufficient potters of the Middle Bronze Age.

Black Patch Fabrics

F1. Thick walled very coarse flint tempered fabric.

F2. Thinner walled very coarse flint tempered fabric.

F3. Thinner walled medium coarse flint tempered fabric.

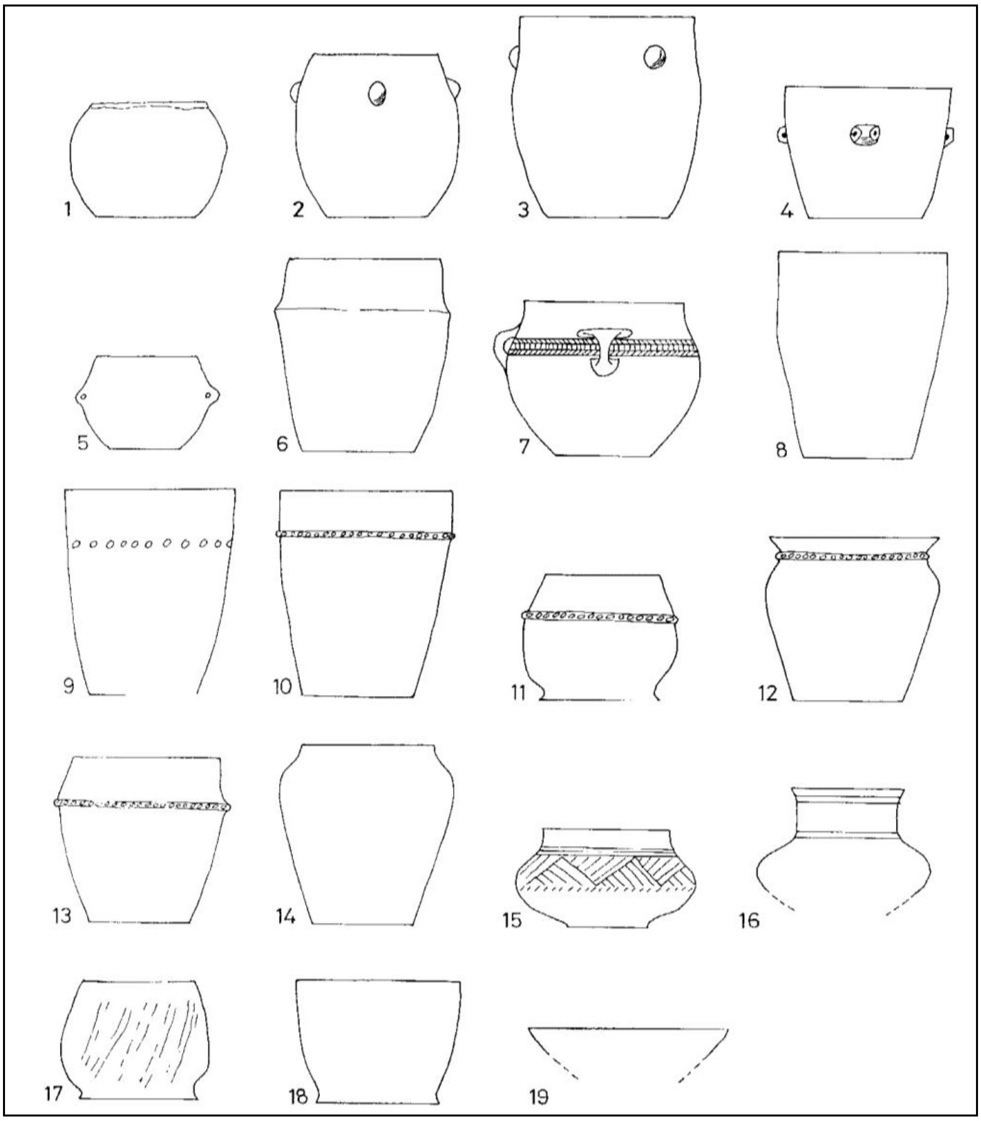
F4. Thinner walled fine to medium fine flint tempered fabric.

F5. Thinner walled fine flint tempered fabric.

The typological associations of the fabrics indicate that Fabrics F1, F2, F3 and F4 are Middle Bronze Age, F5 is Late Bronze Age.

Table 6.13 Ellison type by site

SITE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	BUI
Amberly Mount										Y										
Blackpatch										Y										
Black Patch 1977-79	Y	Y	?			Y	Y	?	Y	Y										
Black Patch 2005-06	Y	Y	Y			Y	Y			Y										
Castle Hill Newhaven			Y									Y								
Cock Hill		Y					Y	Y		Y										
Downsview	Y	Y	Y		Y	Y		Y		Y										Y
Highdown Hill	Y						Y		Y		Y	Y								
Itford Hill	Y	Y			Y	Y			Y	Y										
Itford Hill Cemetery		Y	Y			Y	Y		Y	Y										
Kingston Buci	Y						Y				Y						Y			
Mile Oak	Y	Y	Y			Y	Y	Y	Y	Y			Y		Y					Y
New Barn Down										Y			Y						Y	
Park Brow							Y			Y										
Patcham Fawcett 1										Y										Y
Patcham Fawcett 2	Y	Y	Y			Y		Y												
Plumpton Plain A	Y	Y	Y	Y			Y													
Plumpton Plain B												Y	Y		Y	Y	Y	Y	Y	
Selmeston										Y										
Steyning Pound Hill	Y	Y		Y	Y					Y										
Varley Halls	Y	Y	Y		Y	Y			Y	Y										
West Blatchington								Y			Y			Y			Y	Y	Y	



Type	Form	Previous category
1	Shapeless baggy jar, sometimes with turned-over simple rim	A3
2	Ovoid or straight-sided jar with plain unperforated applied lugs at maximum diameter	A3
3	Ovoid jar with plain, unperforated applied lugs and out-flaring rim	A3
4	Straight-sided small pot with perforated applied lugs	A3
5	Small ovoid pot with perforated lugs . .	A3
6	Plain large urn with slack biconical profile and slightly emphasized carination	A1/A3
7	Globular jar with bar-handles and incised geometric decoration . .	A4
8	Plain bucket-shaped urn . .	A1
9	Bucket urn with line of finger-tipping applied directly on the body . .	A1
10	Bucket urn with finger-tipped cordon . .	None
11	Squat ovoid jar with protruding base and applied finger-tipped cordon at maximum diameter	B1B
12	Large shouldered jar with out-flaring rim and applied finger-tipped cordon in hollow of neck	B1A
13	Large shouldered jar with finger-tipped cordon round carination . .	None
14	Plain large shouldered jar with slack profile . .	B5
15	Small rounded pot with incised geometric decoration . .	B4
	Urnfield imports . .	B4
17	Plain ovoid jar with protruding foot	B 2
18	Plain straight-sided jar with protruding foot . .	None
19	Plain low bowl with incipient foot-ring . .	B6

Fig. 6.27 Ellison Type Pottery. After Ellison, 1978, 33-4

6.6.2 Middle and Late Bronze Age pottery distributions

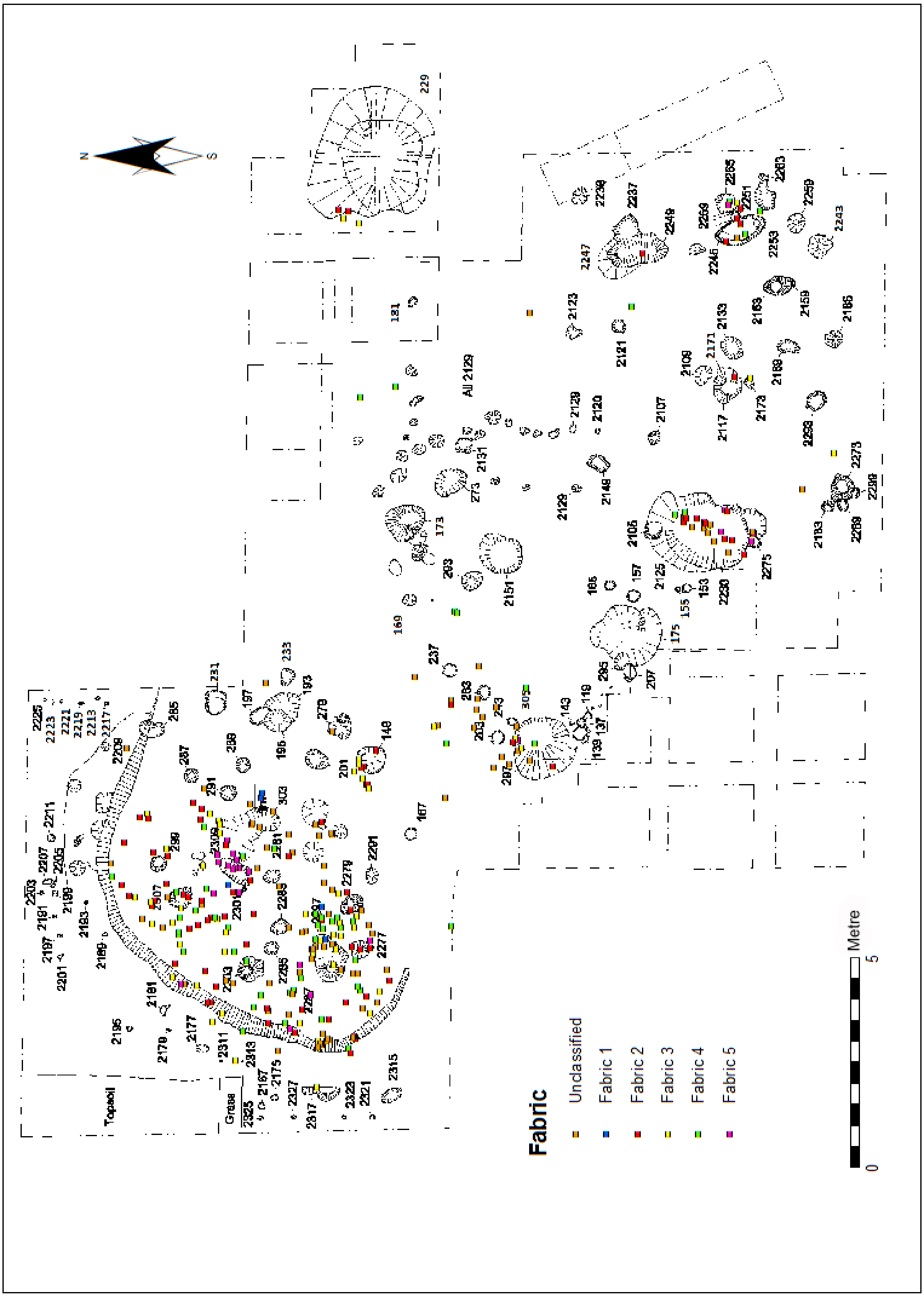


Fig. 6.28 The pottery distribution across the site

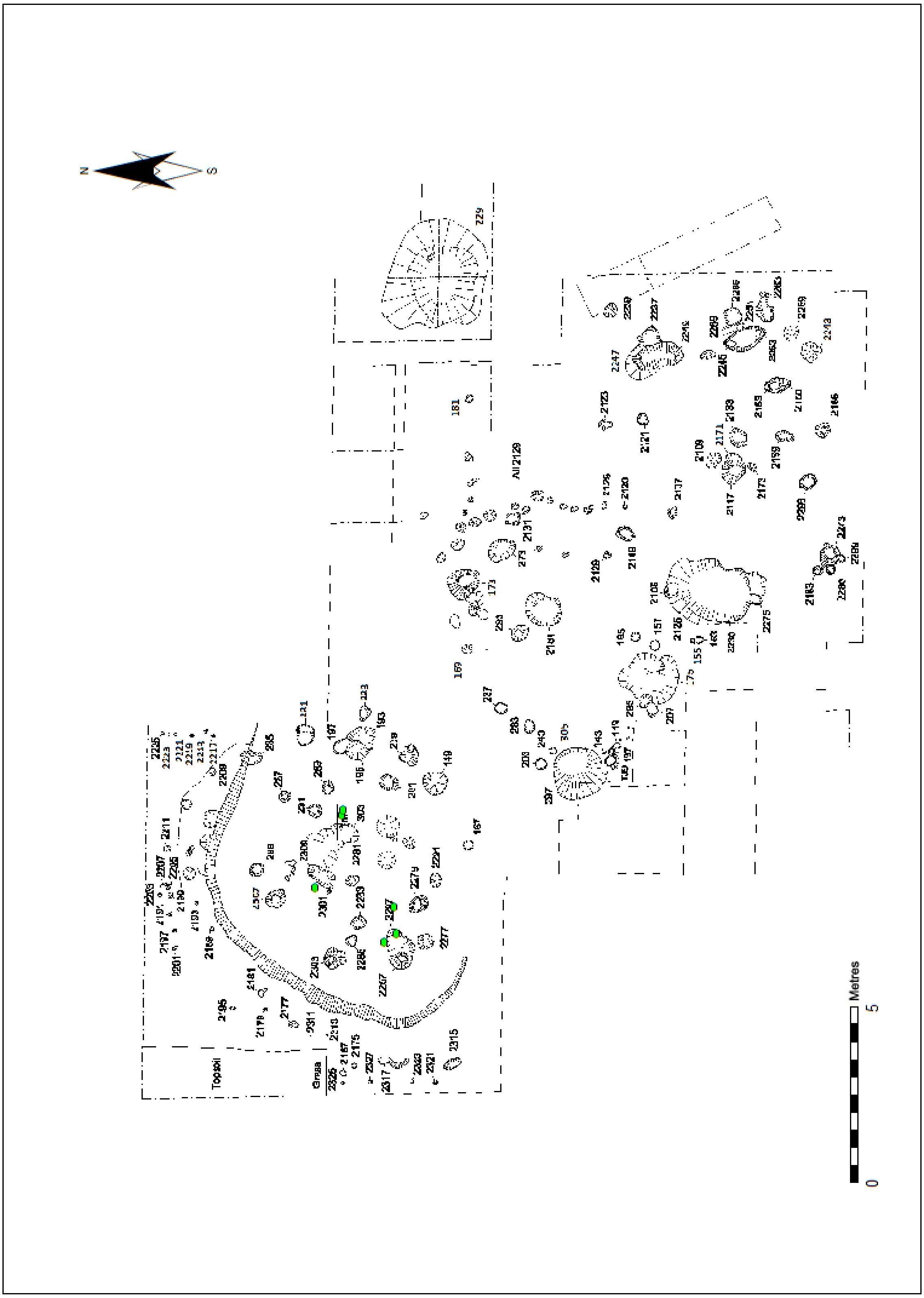


Fig. 6.29 Distribution of Fabric 1 pottery. Fabric 1 marked in green

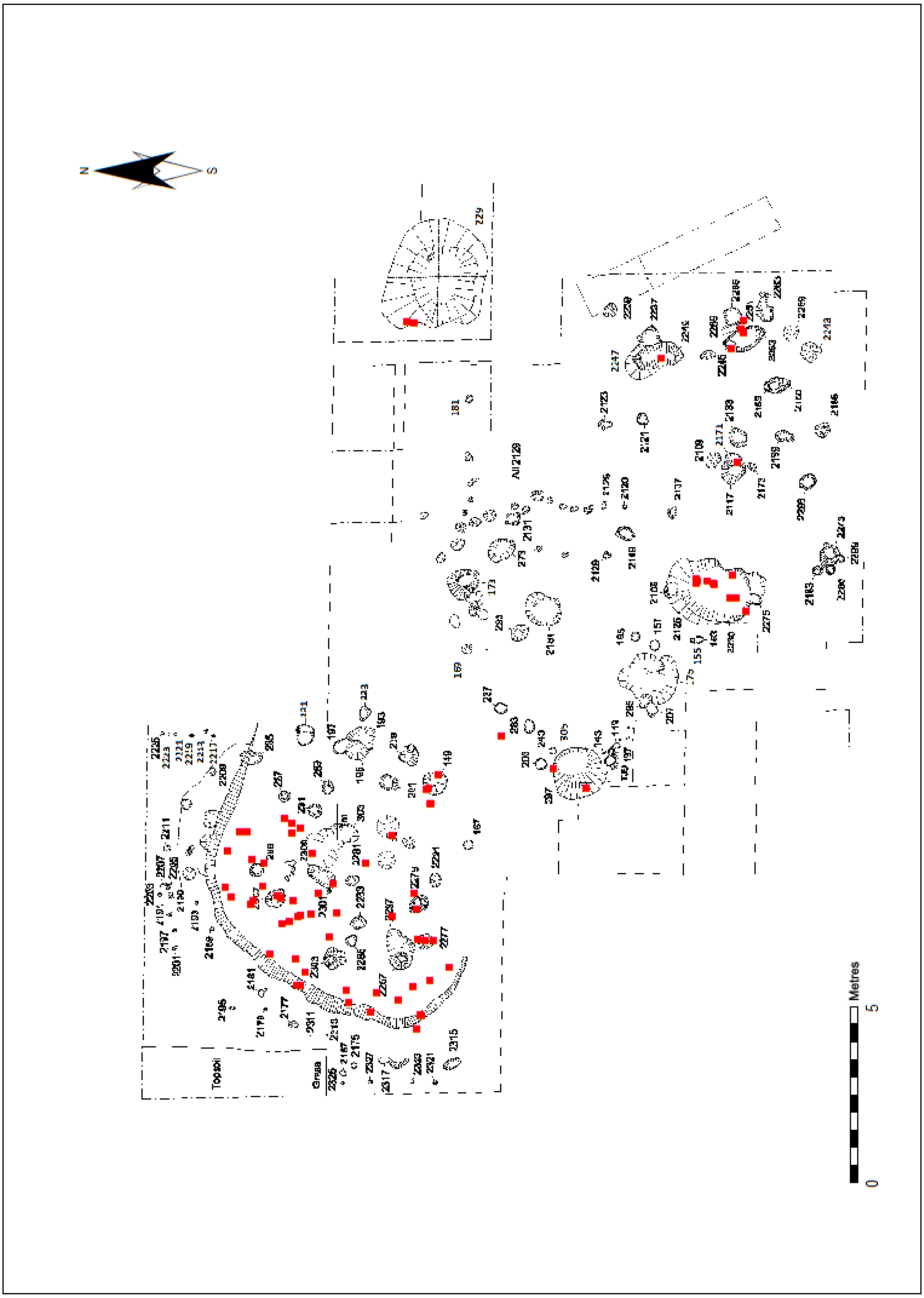


Fig. 6.30 Distribution of Fabric 2 pottery. Fabric 2 pottery marked in red

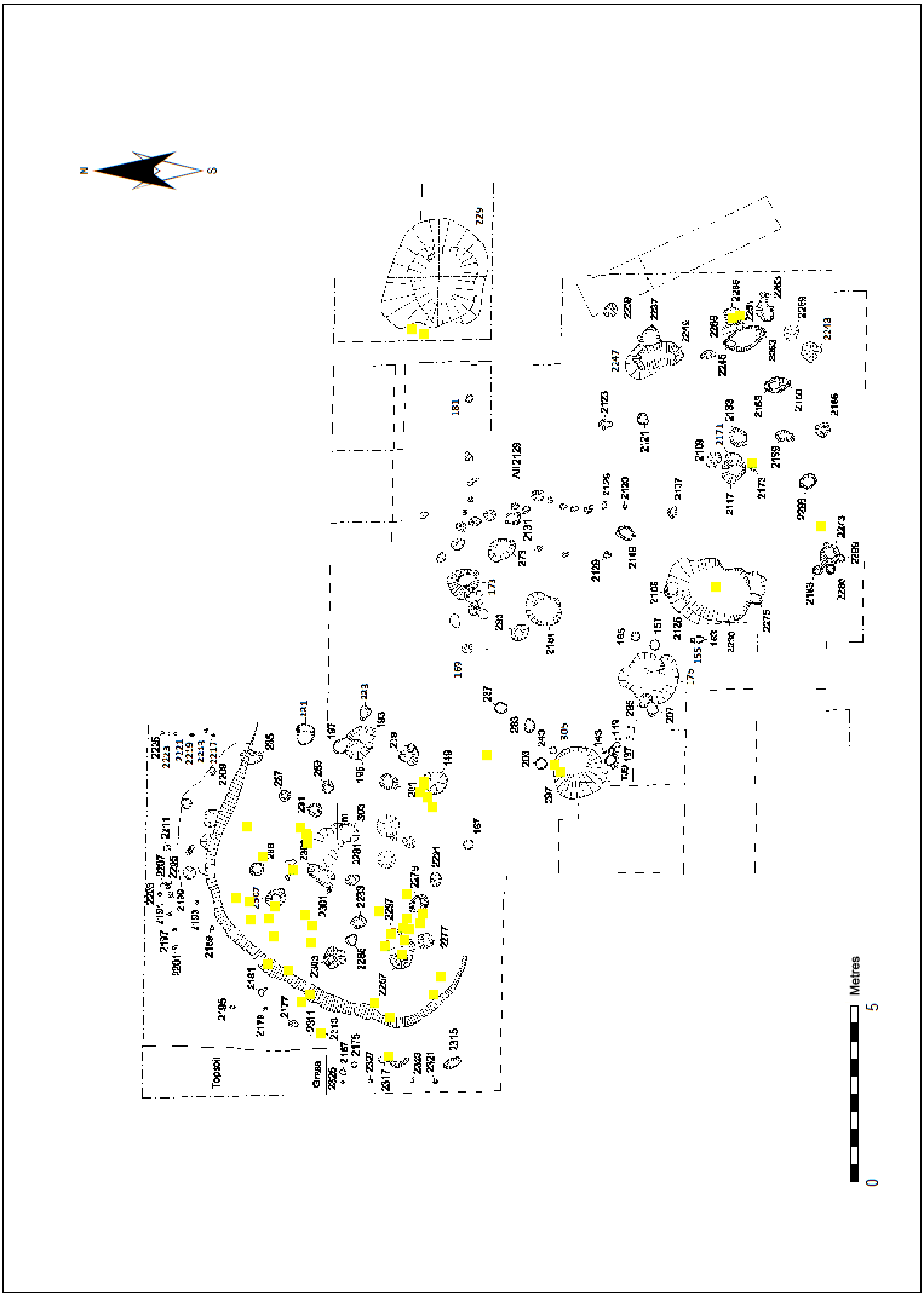


Fig. 6.31 Distribution of Fabric 3 pottery. Fabric 3 pottery marked in yellow

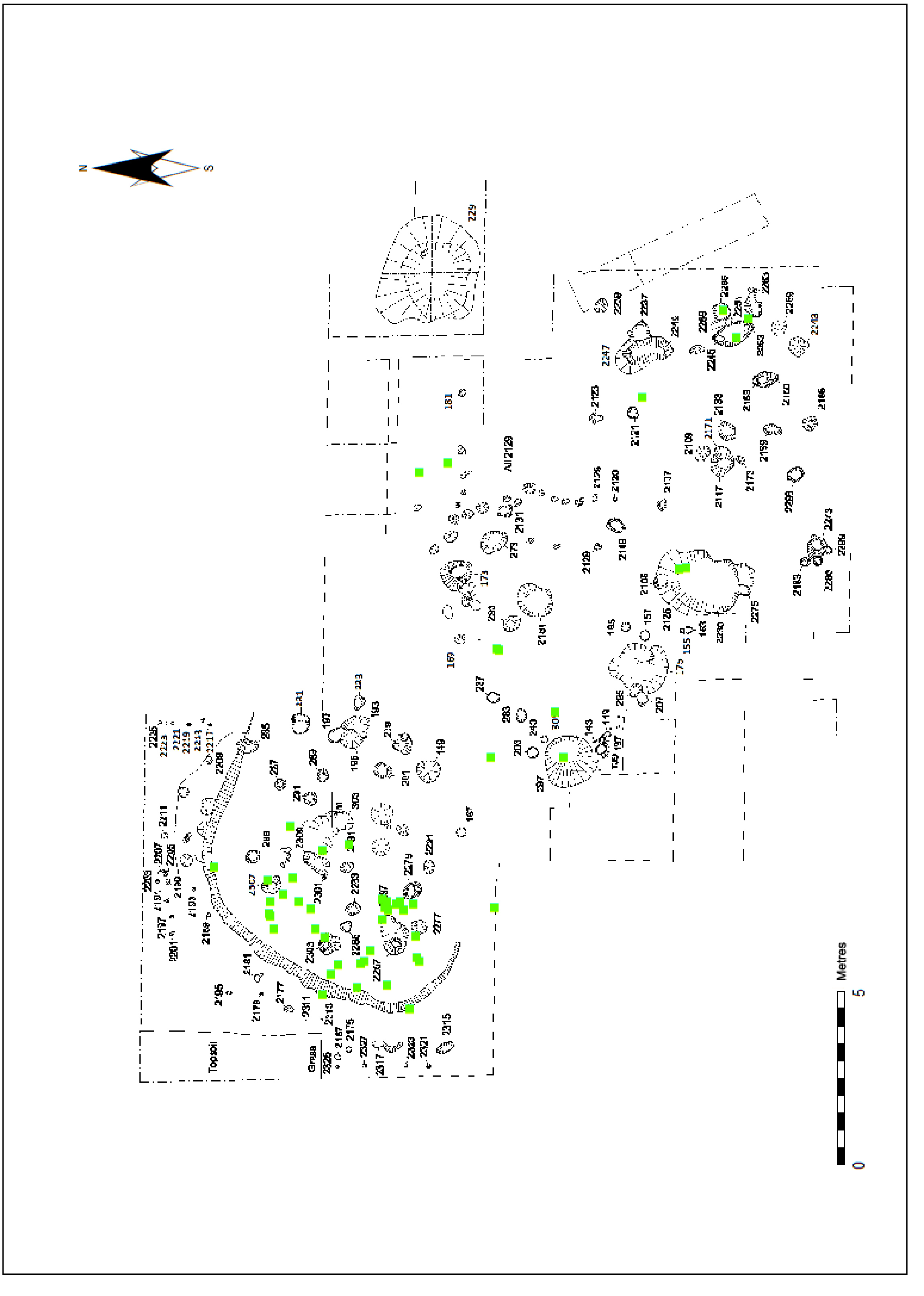


Fig. 6.32 Distribution of Fabric 4 pottery. Fabric 4 pottery marked in light green

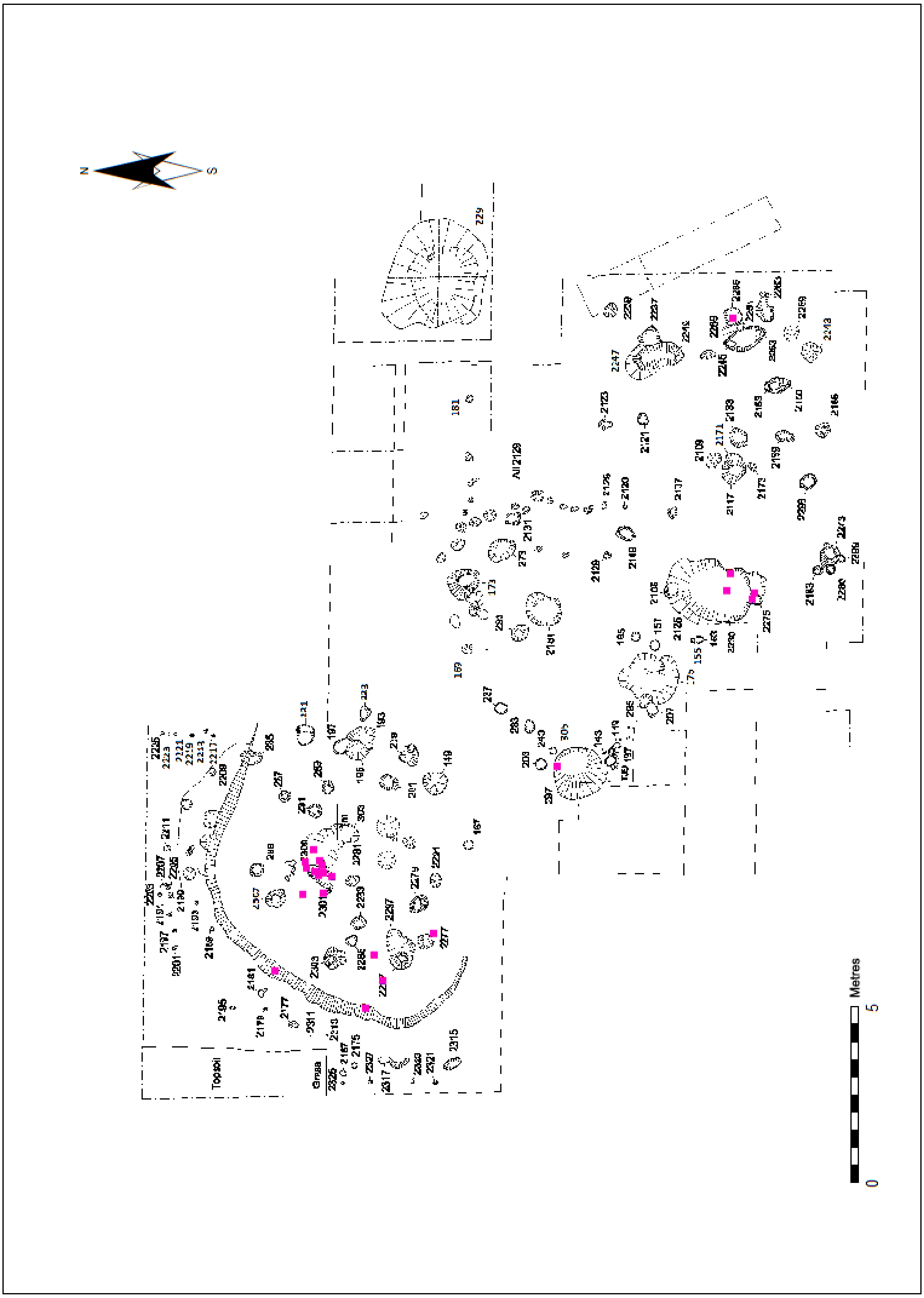


Fig. 6.33 Distribution of Fabric 5 pottery. Fabric 5 pottery marked in magenta

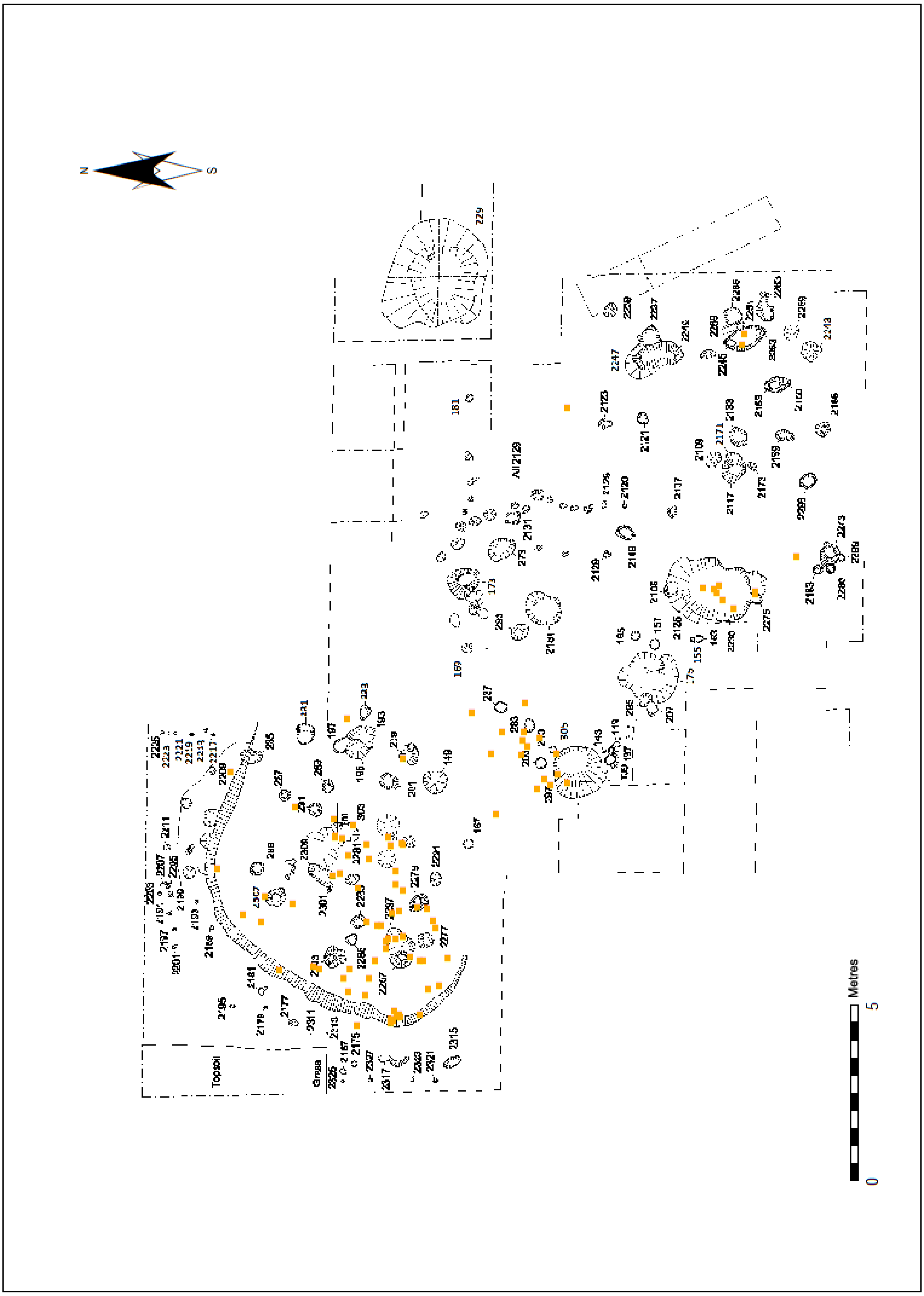


Fig. 6.34 Distribution of Unclassified pottery. Unclassified pottery marked in orange

Hut A.

By far the most pottery was found in Hut A: all of Fabric 1, 54% of Fabric 2, 91% of Fabric 3 and 82% of Fabric 4 by weight. Two postholes in Hut A contained pottery; one in the inner postring, 201 had two sherds of Fabric 2 pottery weighing 73.8g and two pieces of Fabric 3 pottery weighing 33.7g. The other posthole situated in the outer ring 149, contained eight pieces of Fabric 2 weighing 68.4g and two sherds of Fabric 3 weighing 26.2g. No other excavated features contained pottery.

All of the layers in Hut A contained pottery, as can be seen in Table 6.14 below which shows not only the weight but the sherd count for each fabric by context.

Table 6.14 Fabric weight (g)/sherd count by layers in Hut A

Context	Fabric 1	Fabric 2	Fabric 3	Fabric 4	Fabric 5	Total
215	147.0/1	0.7/1		39.7/3		187.4/5
223	240.1/5	223.2/14	76.8/10	9.3/2	73.6/14	623/44
2145		58.6/2				58.6/2
2164				2.8/1		2.8/1
2165		6.4/2				6.4/2
2215			18.8/4	9/1		27.8/5
2216	32.7/1	93.7/14	49.4/14	26.6/12	12.9/3	215.3/44
2235	227.1/2	166/14	74.6/16	111.3/26	16.3/3	595.3/61
2255		22.9/1		3.4/1		26.3/2
2271	119.8/2		230/12			349.8/14
Total	766.7/11	571.5/48	449.6/56	202.1/45	102.8/20	2092.7/180

Table 6.15 Average sherd weight (g) by fabric and context

Context	Fabric 1	Fabric 2	Fabric 3	Fabric 4	Fabric 5	Av.
215	147.0	0.7		13.2		53.6
223	48	15.9	7.6	4.7	5.2	16.3
2145		29.3				29.3
2164				2.8		2.8
2165		3.2				3.2
2215			4.7	9		6.9
2216	32.7	6.7	3.5	2.2	4.3	9.9
2235	113.5	11.9	4.6	4.3	5.4	28
2255		22.9		3.4		13.2
2271	60.9		19.2			40.1
Av.	80.4	12.9	7.9	6.6	5.0	

Table 6.15 shows the average weight of sherds for each fabric by context. A large number of sherds, almost 20%, could not be sorted to fabric because of their small size. They were, however, Deverel-Rimbury. This is indicative of the extremely friable nature of the pottery in question. There is no patterning of size or position for Fabrics 2, 3 and 4. However, most of the pottery was orientated in a horizontal manner when excavated and the sherds were fairly unabraided, indicating trampling *in situ* rather than post-depositional movement from outside of the hut.

Almost 50% of Fabric 1 pottery was found on the hut floor contexts 223 and 2271 near the fire-cracked flint scatter on the right hand side of the hut just inside the perimeter. The Fabric 1 sherd found in context 2271 was part of a pottery scatter that also contained Fabrics 2, 3 and 4 pottery. This group included rims from three different pots as well as an applied cordon, an applied boss and fingernail decoration. Such a group containing different fabrics and decorative features from several pots would seem to be deliberately placed, as it was found in close association and was at first thought to be a single pot.

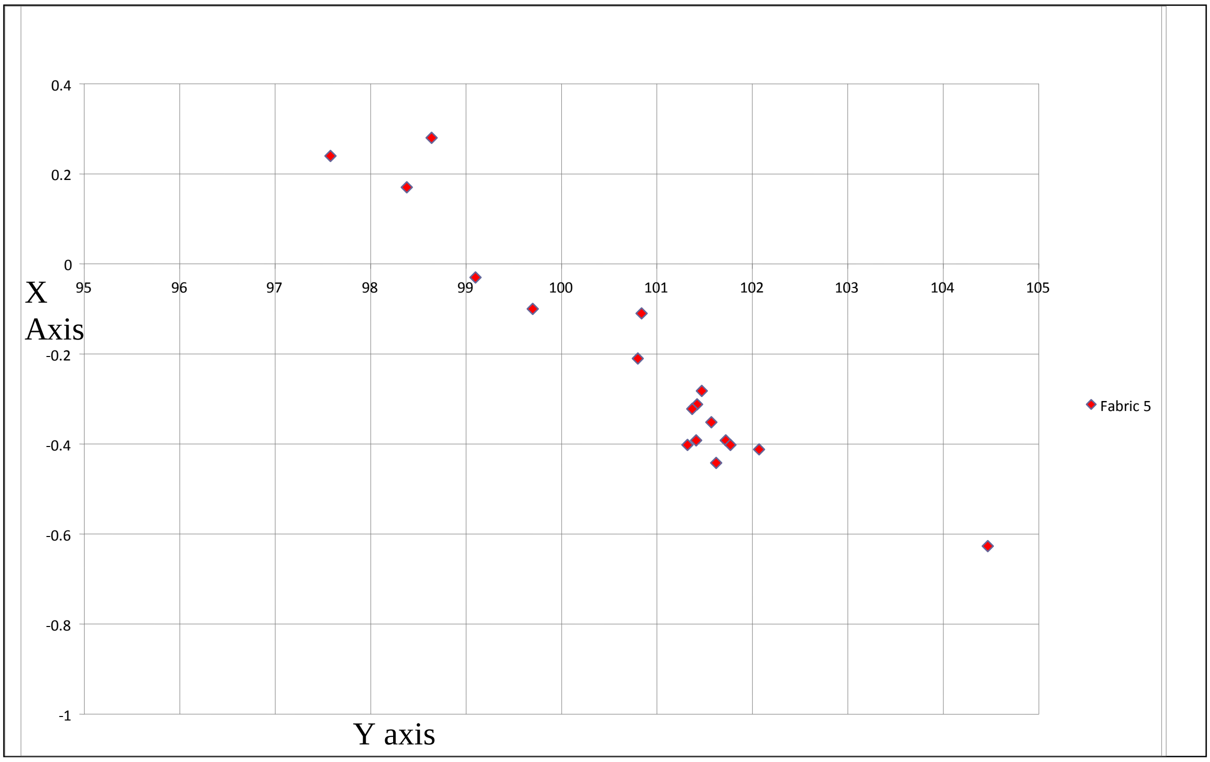


Fig. 6.35 Shows the distribution of Fabric 5 pottery in hut A by depth and position on the East-West axis of Hut A. X axis is depth, Y axis is the Easting. Units are 1m

The majority of Fabric 5 pottery was found in a very small three dimensional space in hut A indicating later use and downslope erosion. Figure 6.35 shows the Fabric 5 distribution in sectional view across Hut A.

Hut B**.**

Tables 6.16 and 6.17 show the distribution of pottery in Hut B by weight and number of sherds. All of these contexts are within the large pit context 297.

Table 6.16 Weight and number of sherds per context in Hut B

Context	Fabric 1	Fabric 2	Fabric 3	Fabric 4	Fabric 5	Totals
183				12.8/4		12.8/4
186						
218						
219		6.4/2	.0.9/1			7.3/3
242		17.2/1		5.8/1		23/2
Totals		23.6/3	0.9/1	18.6/5		43.1/9

Table 6.17 Average sherd weight by fabric and context in Hut B

Context	Fabric 1	Fabric 2	Fabric 3	Fabric 4	Fabric 5	Av.
183				3.2		3.2
186						
218						
219		3.2	.0.9			2.1
242		17.2		5.8		11.5
Av.		10.2	0.9	3.7		

The lack of pottery in hut B shows the amount of plough damage. Only pit 297 contained pottery. It is notable for the fact that compared to other rubbish found in the pit (bone, fired clay, worked stone and fire-cracked flint and parts of a loom weight) the amount of pottery is very low, only nine sherds weighing 43.1g in total. If this hut is an animal hut this might explain the lack of pottery and the absence of pottery in the manure that was possibly spread from this source.

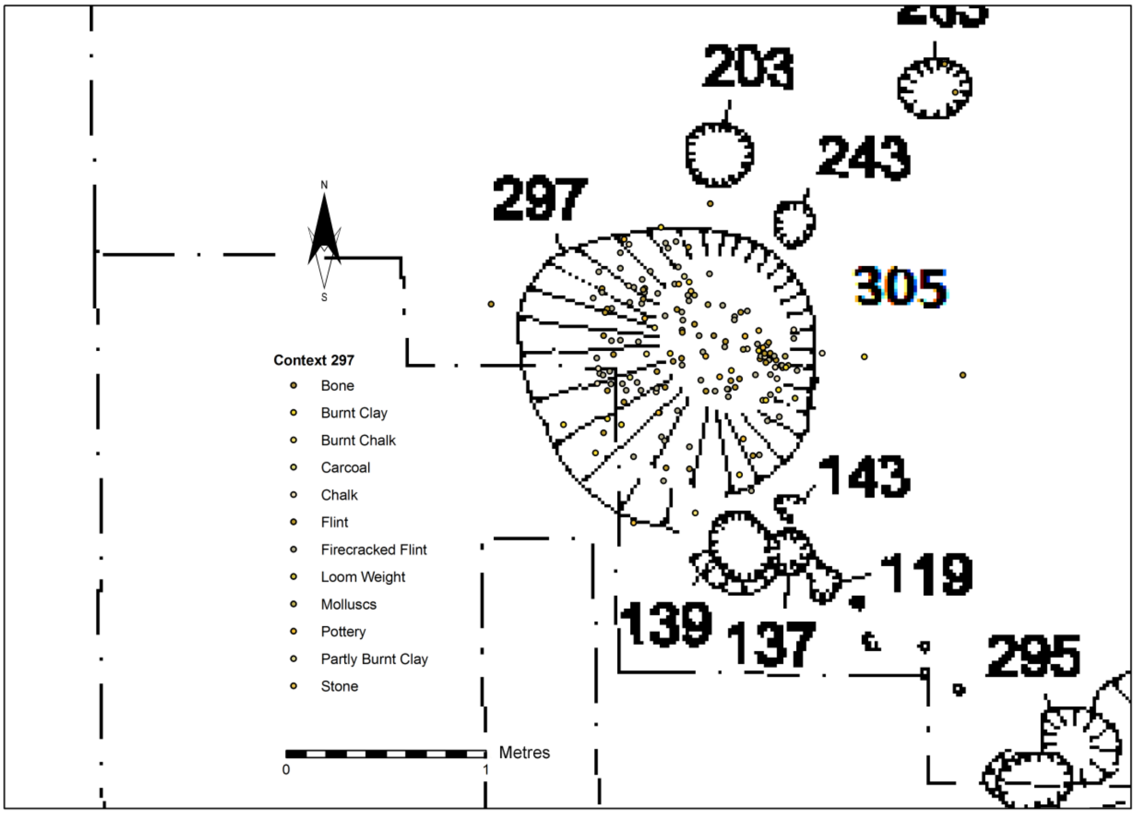


Fig. 6.36 Plan of artefact distribution in pit 297

Figures 6.36 and 6.37 show the random distribution of artefacts in pit 297.

Hut C has more pottery than Hut B but much less than Hut A, possibly because of variable plough damage across the lower part of the site. Only one posthole contained pottery, 2105. This contained seven sherds of Fabric 2 weighing 18.8g and three sherds of Fabric 4 pottery weighing 2.4g. Tables 6.18 and 6.19 show the weight/ sherd count and the average weight for internal features in Hut C. Contexts 2121 and 2173 are separate features. Contexts 2126, 2140, 2142, 2144 and 2146 are descending layers of pit 2105.

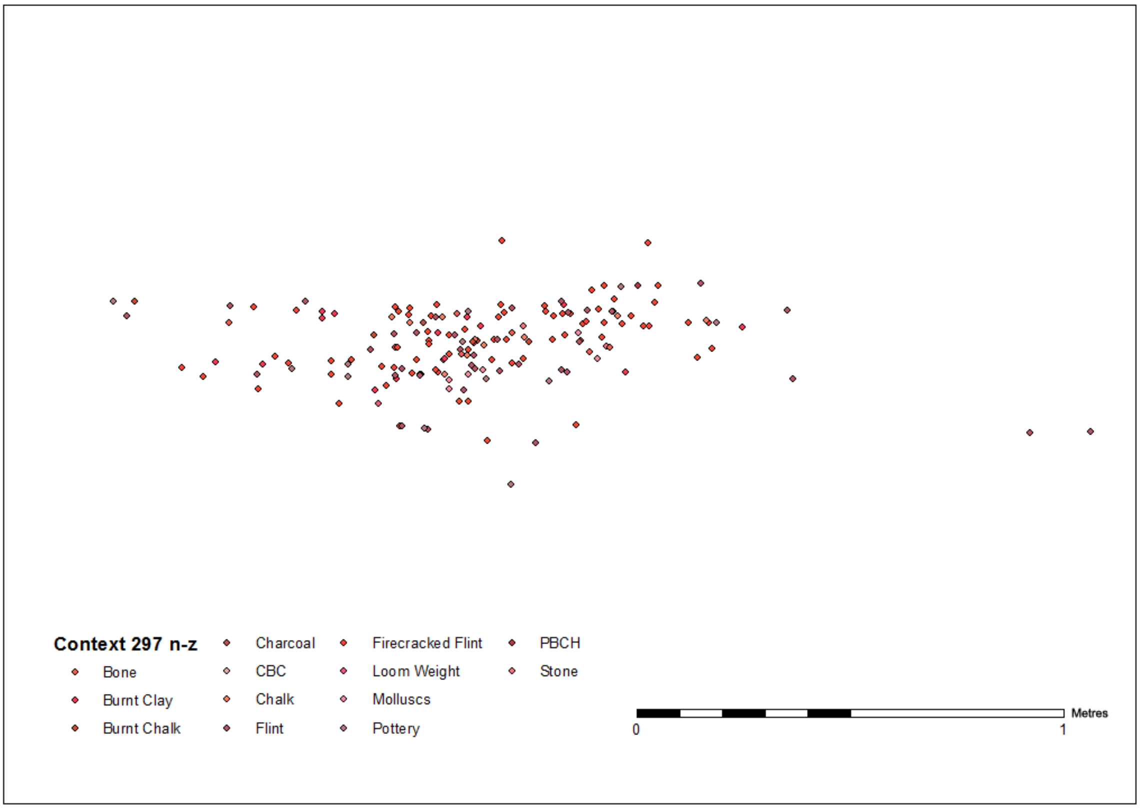


Fig. 6.37 West facing section of pit 297 showing artefact distribution

Table 6.18 Weight/sherd count by fabric and context in Hut C

Context	Fabric 1	Fabric 2	Fabric 3	Fabric 4	Fabric 5	Totals
2121				3.6/1		3.6/1
2173			10.2/1			10.2/1
2126					8.5/3	8.5/3
2140						
2142			0.9/1			0.9/1
2144		37.7/6				37.7/6
2146						
Totals		37.6/6	11.1/2	3.6/1	8.5/3	60.9/12

Once again pit 2105 has very few sherds of pottery. Although there are three sherds of Fabric 5, these are in the top layer and are half the size of those in Hut A so it is probable that they have moved downslope from Hut A. It is also possible they are *in situ* from later use.

The only other large feature to contain pottery is context 2173 which contains one sherd of Fabric 3 weighing 10.2g.

Table 6.19 Average sherd weight by fabric and context in Hut C

Context	Fabric 1	Fabric 2	Fabric 3	Fabric 4	Fabric 5	Av.
2121				3.6		3.6
2173			10.2			10.2
2126					2.8	2.8
2140						
2142			0.9			0.9
2144		6.3				6.3
2146						
Av.		6.3	5.5	3.6	2.8	

Table 6.20 Weight/sherd count by fabric and context in Hut C

Context	Fabric 1	Fabric 2	Fabric 3	Fabric 4	Fabric 5	Totals
2121				3.6/1		3.6/1
2173			10.2/1			10.2/1
2126					8.5/3	8.5/3
2140						
2142			0.9/1			0.9/1
2144		37.7/6				37.7/6
2146						
Totals		37.6/6	11.1/2	3.6/1	8.5/3	60.9/12

Table 6.21 Sherd weight by fabric and context in Hut C

Context	Fabric 1	Fabric 2	Fabric 3	Fabric 4	Fabric 5
2121				3.6	
2173			10.2		
2126					2.8
2140					
2142			0.9		
2144		6.3			
2146					

Coarse ware, Everyday ware and Fine ware

62% of the Hut A assemblage falls into Ellison's everyday ware sherd thickness being between 7mm and 10mm in width, 36% is heavy duty ware, sherd thickness being greater than10mm and only 2% is fine ware, sherd thickness being less than 7mm in thickness. The overall sherd thickness of the Hut A assemblage is between 1 and 2mm thicker than the assemblages on Hut Platform 4. This increase in thickness and the forms found are indicative of a food processing area. With little evidence of storage or consumption it is similar, if slightly thicker, to the assemblage of Hut 1, Hut Platform 4. It is also noteworthy that the majority of the sherds are similarly fired. Given the uniformity in width, (30% being 10mm thick, Figure 6.38) and the firing it is possible that an individual potter or small family group is responsible for most if not all the pottery in the assemblage and there is a different individual/group operating in Hut Platform 3 from Hut Platform 4.

6.6.3 Pottery Disposal

The pottery assemblage was subjected to a similar analysis of size and abrasion by context. Each sherd was given a surface and an edge abrasion coefficient from 1 to 4 depending on the amount of abrasion. This is compared to size in an attempt to understand the method of deposition and post-depositional processes (Brück 1995, 216). Figure 6.39 shows how small much of the assemblage at Black Patch was. This fact together with the large number of unidentifiable sherds is probably mostly due to *in situ.* trampling. This is particularly true in hut A, where all the layers have similar surface and edge abrasion coefficients with the edge number being slightly higher.

The only exception is context 2271 where most of the pottery over 5cm was found. This is possibly indicative of deliberate deposition. Although there were very few postholes with pottery, the abrasion coefficients are also low showing that they had either been swept into the posthole during cleaning or had been curated for depositional purposes. The large number of unidentified sherds between Huts A and B is also possibly reflective of the regular cleaning of Hut A and disposal in the midden at the back of Hut B.

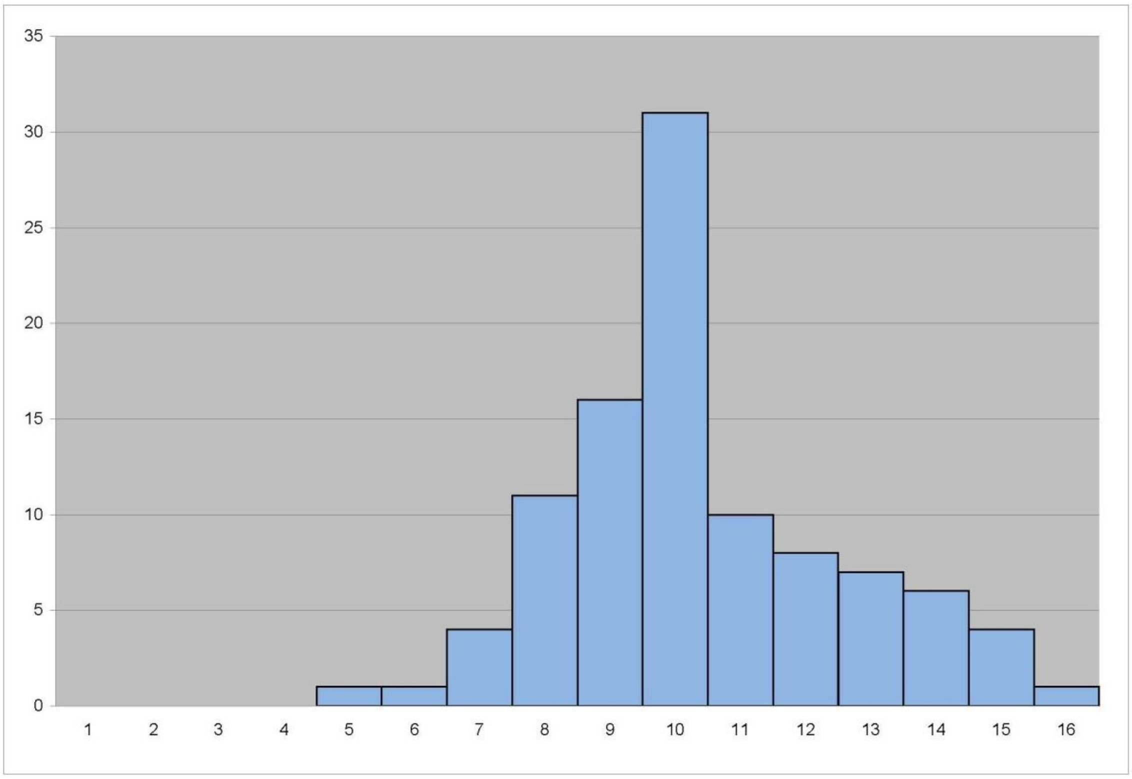


Fig. 6.38 Sherd width in mm by percentage

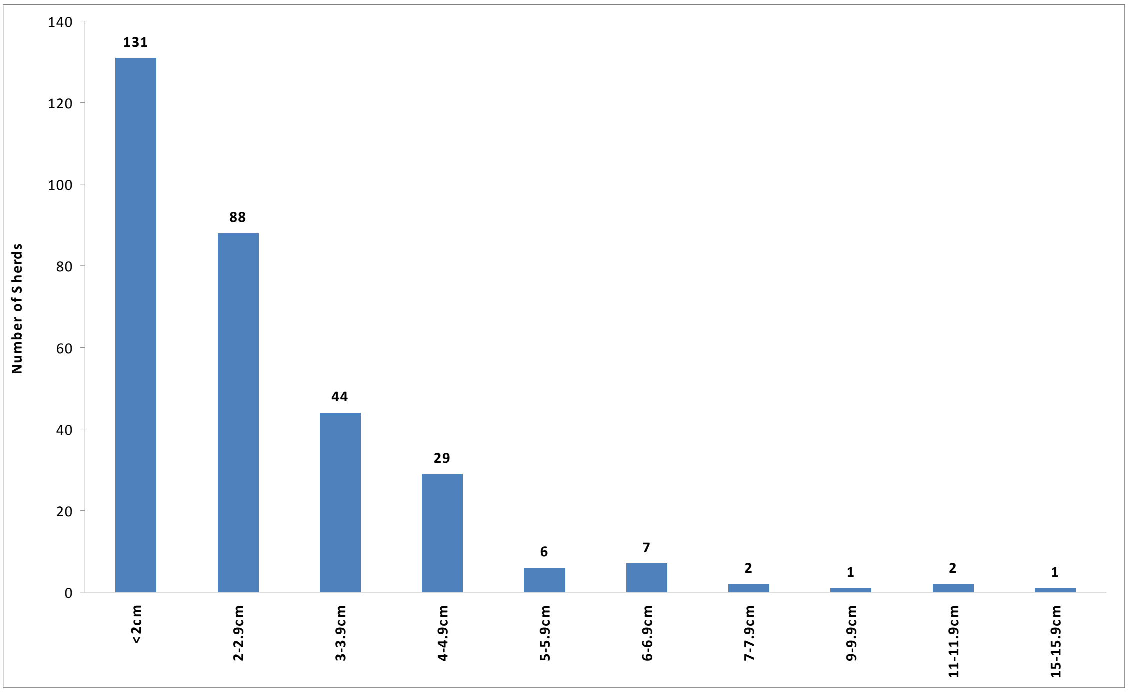


Fig. 6.39 Length of pottery sherds

Table 6.22 Averaged Surface and Edge abrasion by context

Context No. And Hut	Surface Abrasion	Edge Abrasion	Context No.	Surface Abrasion	Edge Abrasion
141 A	1	2	2164	1	2
149 A	2	2	2165	1	1.25
161 A	1	1.5	2173 C	1	2
183 B	2	2	2188	2	2
201 A	1	1.6	2215 A	1.4	1.6
215 A	1.1	1.7	2216 A	1.7	2.1
219 B	2	2	2230	2	2
223 A	1.3	1.55	2234 A	1.5	1.75
242 B	1.25	1.5	2235 A	1.5	1.8
2106 B	2	3	2248	4	4
2115	2	2	2251 C	2	2
2118 C	1	2	2254 C	1	1
2121 C	2	3	2255 A	1.75	2.25
2126 C	2	2	2258 C	1	1
2142 C	1	2	2266 C	2.3	2.3
2144 C	3.5	3.5	2271 A	1	1
2145 A	2.2	2.5	2318 A	3	3

6.6.4 Comparison with other sites

Introduction

This section will compare the pottery from various sites, firstly by looking at assemblages by form and function and secondly, by looking at deposition areas within sites to try and identify possible patterns of activity or ritual deposits.

These endeavours are complicated by two major factors. The first is inconsistent excavation and recording. In an effort to overcome this excavators and excavation dates will be given in the text. The second is as Seager Thomas states ‘Much recent research on Deverel-Rimbury settlement and of other sites suggests that the use and deposition of everyday objects on them, including pottery, is not always functional………this might explain some of the ‘odder’ Deverel-Rimbury finds from the county…………If we buy into this, however and most British prehistorians do, we must face up to its implications for the functional approach to the study of pottery distribution practiced by Ann Ellison and her disciples. It is possible that their distributions are not quite what they seem’ (Seager Thomas 2008, 37). However pottery does have a functional purpose as well as possible ritual properties even if they are sometimes intertwined and as such, both interpretations are valid given our present level of knowledge of the interaction of Bronze Age societies.

Black Patch 1977-79

Ellison (1982, 361-71) identified Sussex types 1, 2, 3, 6, 7, 8, 9 and 10. This adds types 7, 9 and 10 to the 2005-6 excavation all of which are large vessels probably used for storage. Hamilton (2002, 47), has postulated that, given similarities in fabric and decoration in the few examples known, they might be the work of a single craftsperson/workshop.

As well as storage jars, there is also a marked increase of thinner sherds, Ellison's fine ware. Within the hut areas, distribution is complicated. In Hut 1 of Hut Platform 1 the pottery is found distributed centrally on the right hand side of the hut. It is broadly matched by distribution of flint flakes and fire-cracked flint, although there is not much of the latter. Interestingly, the two pieces of bronze found in the hut are also within this area.

Hut 2 has most of its pottery located on the left of the hut in the centre with a few pieces on the right hand perimeter. This does not match the flint which is evenly distributed.

Hut 3 has most of its pottery on the left hand side of the hut under the eaves or centrally placed on the right hand side. The rear right hand side of the hut contains several loom weights. There is no correspondence between these distributions and those of the fire-cracked and worked flint or the four pieces of bronze.

The pottery from Hut 4 is mostly centrally positioned towards the front of the hut with a few pieces under the eaves on the left hand side. This mirrors the distribution of the fire-cracked-flint but not the worked flint which is ubiquitous, nor the two pieces of bronze.

Hut 5 has very little pottery but flint is distributed at the back of the hut. There is a small amount of fire-cracked flint towards the centre of the hut.

Very little pottery or anything else was found on Hut Platform 1 leading Drewett to believe it was systematically cleared prior to desertion (Drewett 1982, 327-339). Again, given the nature of the different areas being assessed, it will be more useful to compare these distributions with sites elsewhere given that Huts B and C were badly and unevenly plough damaged.

Deposition in postholes and other features is easier to compare.

Pottery was found in two postholes in the south-east quadrant of Hut A Hut Platform 3, one in the inner postring and one in the outer. They were to the left of the entrance and are about 2m apart. Both postholes contained several sherds.

Only the pit 297 contained pottery in Hut B.

Other than in pit 2125, only two other features in Hut C contained pottery, 2173, in the middle of the hut and 2121 towards the perimeter on the right hand side. Both only contain one piece.

Hut 1 on Hut Platform 4 had pottery in one posthole from the second phase, two fragments near the top of 131. Near the middle of Hut 1, two features contained pottery. 161 contained five sherds, one of which had a lug and 148 contained 25 sherds from three different fabrics. Two of the sherds were decorated, one with a row of fingernail impressions and incised groove line. Pit 1 near the front left of the hut contained 13 sherds of the same fabric.

Hut 2 had no features containing pottery.

Hut 3 had two postholes with pottery, 62 and 64. The first had a sherd containing mica in its fabric and is probably later (Post-Deverel-Rimbury), whilst the second contained one small fragment. All four features forming the entrance porch contained pottery. Posthole 75 contained 11 small sherds from the lower part of the feature, of which 10 were of similar fabric. Posthole 80 contained several body fragments. Both of the post slots adjoining 75 and 80 contained pottery. The right hand slot 40 contained one sherd but the other 41, contained quite an assemblage. They were 32 sherds from a decorated vessel including six decorated sherds and a rim, two other rims in the same fabric, three further sherds from a pot in a different fabric, a fragment from a vessel of yet another fabric, eight body and one base sherd from two vessels in yet another fabric and lastly another rim from the same fabric as the 32 sherds. Several internal features also contained pottery. Pits 3, 4 and 5 at the back of the hut contained very little pottery. Three contained one sherd, four contained four sherds of the same fabric. The pottery from both pits was found at the bottom. Pit 5 contained five sherds in total. Feature 7, a large pit just inside the right hand posthole entrance, contained seven sherds, all but one in the same fabric. These included a rim with a line of finger impressions just below the actual rim. Feature 47 near the centre of the hut contained one sherd. Two other features contained pottery, 204 under the eaves on the right hand side of the hut and 207 towards the rear of the hut. Both contained an individual sherd.

Hut 4 has only one posthole with a single sherd of pottery. However, the hut floor has two pottery clusters. One is a single vessel with two base sherds and 42 body sherds. The other is described in the archive as being smashed on the hut floor, had many body sherds plus rim and base and had a simple lug decoration. Both these clusters were on the left hand side of the hut, one central and the other at the back under the eaves. Two large pits just inside the entrance on the left hand side contain a reasonable amount of pot. Context 058 had four rims plus 12 body sherds, plus various fragments from three fabrics and 086 contained six body sherds, one rim and two base sherds assumed by the analyst to be in part the same vessel as in 058. One small pit in association with 058 and 086, context 090, had seven sherds from two fabrics, three of the sherds conjoined.

Hut 5 contained no feature with pottery.

Other than fence postholes, one further pit, number 2, is just south of Hut 2. It contained six sherds.

Hut Platform 4 has two ponds. The first pond, 1, contained 300g of pottery of which almost half was assigned to the Roman or Medieval periods. The other pond, 2, contained just over 1kg of pottery of which 22% was from later periods. Most of the later pottery was found towards the top of the fill. However, six Medieval or Roman sherds were found in the lower level, along with one from the Post-Deverel-Rimbury period. These are the only areas on the site with any post Roman pottery, suggesting these hollows were used into medieval times.

The pond excavated in 2005-6, context 229, contained no pottery.

Hut Platform 1 contained a much smaller quantity of pottery than its counterpart Hut Platform 4, further down the slope. The excavator believes that the huts may have been systematically cleared before desertion. The lack of usable items indicates a move close-by. The two huts contained little pottery. However, two features are of more interest. Context 13, a pit to the south-east of Hut 2, contained one rim and 28 body sherds from five different fabrics and context 72, which contained the cremated body of a seven to eight year old child in a complete type 6 vessel (Drewett 1982, 325-365).

The sherd width of each hut on Hut Platform 4 had a different distribution.

From this, Drewett has deduced different hut usages. Hut 1 contained mostly everyday ware with small amounts of fine and heavy duty ware. This is interpreted as a hut for food production. Hut 2 also has mostly everyday ware. This is tentatively labelled as an animal hut. Hut 3 has a much flatter distribution with four small peaks. It is the only hut with a large (20) percentage of sherds over 10mm in thickness. Almost 25% of the pottery in this hut is 6mm or less in thickness. This Drewett called the ‘headman’s hut’. 20% of the pottery in hut 4 has a width of 3mm. This is more than any other category, the rest of the distribution being relatively flat between 5 and 11 mm. This is interpreted as a reliant relative’s hut. Hut 5 pottery is bunched around 8-11mm and is interpreted again as an animal hut. Whilst pond 1 has only a few sherds uniformly spread by sherd width, pond 2 contains 64 with a relatively flat distribution peaking at 7-8mm (Drewett 1982, 364).

Only 5% of the sherds analysed by Ellison were over 10mm in sherd width. This figure goes down to 2% if you deduct the content of Hut 3. This compares with a figure of 36% for the 2005-6 excavations and suggests the work of different potters at the two sites.

Itford Hill

The nearest excavation to Black Patch is the site at Itford Hill excavated by G. P. Burstow and G.A. Holleyman between 1949 and 1953 (Burstow and Holleyman 1957). Unfortunately, only the feature sherds survive, so calculations of the whole assemblage are impossible. Positions of pottery finds have been taken from the published report (see above) and as such are probably not 100% comprehensive.

Of the 14 huts identified at Itford Hill, no constructional or entrance postholes contained pottery. Only Huts E and L had internal features containing pottery. In Hut E, pit 27, positioned on the right hand side of the hut towards the eaves equidistant between the front and back of the house, contained an almost complete pottery base. Hut L had two internal features that both yielded ‘a considerable amount’ of pottery (Burstow and Holleyman 1957, 184). Both pits were at the back of the hut just below the low chalk scarp.

Table 6.23 Total weight of pottery per hut

Hut A	1.79kg	Hut H and J	2.78kg
Hut B	0.85kg	Hut K	1.47kg
Hut C	0.68kg	Hut L	9.55kg
Hut D	2.24kg	Hut G	0.06kg
Hut E	P 3.43kg	Hut M	P 0.06kg
Hut F	P 0.43kg	Hut N	P 0.19kg

Table 6.23 shows the weight of pottery found in each hut, making a total of 23.76 kg. Pottery was spread across all the floors where it occurred.

Almost half the pottery came from Hut L, which contained the two pits with large amounts of pottery in them. It is possible some of this pottery was funnelled into this area from higher occupation. Hut E contained about a third of the pottery of Hut L, the same proportion as Hut 3 at Black Patch had to Hut 1. It also contained several loom weights and deposited burnt grain. The excavators here call it a storage hut as opposed to a headman's hut as described at Black Patch (Burstow and Holleyman 1957).

Mile Oak

The pottery assemblage at Mile Oak was analysed by Hamilton (2002, 36-53 and 280-284). Of the 70kg of Later Bronze Age pottery, 19kg is Deverel-Rimbury and 47kg is Post-Deverel-Rimbury pottery.

The Deverel-Rimbury pottery comes from Trench 27 and was in poor condition. However, Hamilton suggests the large size of the sherds implies that the assemblage was very much *in situ* when found: this could also be a dump of secondary rubbish (Drewett pers. comm.) or an abandonment deposition.

Trench 27 contained three identified roundhouses and other features partially surrounded by ditches. Only Roundhouse 2 has pottery deposited in a constructional posthole, context 1468. It was situated on the left hand side of the hut, roughly level with the middle. However, two of the Roundhouses, 1 and 2, contained pottery in porch postholes. Roundhouse 1 contained pottery in contexts 1644 and 1562, one on either side of the entrance and Roundhouse 2 contained pottery in context 1499 situated on the left of the entrance. Both these huts also had a large number of internal features containing sherds. Roundhouse 1 had six features, all located in the front half of the hut. Roundhouse 2 had five, again located to the front of the house with the exception of context 1464, a large pit located centrally to the rear of the hut. A large pit located just outside of Roundhouse 1 on its northern boundary, context 603, also contained pottery.

A total of 6.9kg of pottery was found in contexts belonging to Hut 1, of which 2.2kg was found in the terrace fill. The surface of this hut was covered with a layer of large pieces of charcoal. This led the excavator to believe that this hut had burnt down immediately prior to its abandonment. The large amount of pottery, the size of the sherds and the completeness of several vessels led Hamilton (2002, 38) to suggest that the building had been abandoned suddenly or that the pottery had been left behind as a form of ritual abandonment. The analysis of the charcoal also suggested destruction by fire. The majority of the Deverel-Rimbury sherds from Roundhouse 1 (73%) are made from Fabric CF1- very coarse flint tempered fabric- c13-14mm thick. Whilst it is evidence of storage, it does not correspond to the thickness profile of Hut 1 pottery at

Black Patch as is suggested by Hamilton. All the three fabrics contained in the assemblage are between 12 and 14mm in thickness, as opposed to the much thinner qualities of Hut 1 at Black Patch, where 90% of the pottery was 9mm or less thick.

Roundhouse 2 and its associated features contained only 0.5kg of pottery and again have an emphasis on storage. The lack of pottery may be due to it being an ancillary hut similar to Hut 2 at Black Patch, which has a similar amount of pottery. However the assemblage at Black Patch is thinner and is described by Ellison as being for cooking (Ellison 1982, Table 4, 364).

Roundhouse 3 had just less than 3kg of pottery. Most of this was part of two pottery scatters, one a heavy-duty jar and the other, an urn more characteristic of Essex than Sussex. Again , there was very little evidence of fine wares. Hamilton states that whilst there is no direct comparison by weight, it can be compared to Black Patch Hut 3 because it had 1.9kg of exclusively heavy-duty storage urns and may have been, as such, a craft and storage hut (Hamilton 2002, 38). However, Hut 3 at Black Patch had the widest range of pottery sherd thickness, with little heavy-duty storage ware sherds but many everyday and fine ware pottery sherds (Ellison 1982, Table 4, 364).

There is a difference of opinion between the excavator and the charcoal analyst as to whether Roundhouses 2 and 3 were destroyed by fire. If they were, as with Roundhouse 1, the question remains as to whether they were burnt accidentally or on purpose.

Roundhouse 3 also had three loom weights and a quantity of burnt grain in one of the terrace layers, context 1271. This house also contained the burial of a female in her late teens or early twenties and was considered by the excavator to be a ritual deposit.

There is also a small pond feature associated with the hut context 1504. This contained only three sherds of Deverel-Rimbury pottery.

Hamilton (2002, 38) states the presence of Post-Deverel-Rimbury fabrics and forms in the 3 roundhouses is indicative of chronological overlap in their usage. However, as the structures were terraced, it could well be that later usage was peripheral and the sherds intrusive as at Black Patch.

Trench K contained the rest of the Post-Deverel-Rimbury pottery. The interpretation of trench K is both difficult and controversial. This is not helped by an arson attack on the finds and consequently 12% of the Post-Deverel-Rimbury pottery is de-stratified, leaving 7.1kg from stratified contexts.

There are four published plans and several other interpretations ranging from roundhouses, fence lines to four post structures. Two mounds KII and KIII, in the trench also complicate matters. The archives of this excavation cannot be traced and therefore it is hard to see the matter of interpretation resolved. There are, however, two possible roundhouses which, whilst not mutually exclusive, can not be contemporary as they cover partly the same space but have no constructional features in common. The first contained a pit, 4109, with a large storage vessel which appeared to have been abandoned *in situ.*

The second had one sherd of Middle Bronze Age date in a posthole. This posthole also contained Late Bronze Age dated pottery along with two other features containing Late Bronze Age pottery. This suggests continuance of use of an area and its features rather than the continuance of a building. Other than that, it is hard to see what other information can be gleaned without the archive being found.

Downsview

The pottery assemblage at Downsview was analysed by Hamilton (2002, 170-82).

The weight of pottery found at Downsview is small, only 7.7kg partly due to the small size of the sherds. Two of the identified structures had constructional/load bearing postholes containing pottery. Posthole 2278 located on the left hand side of the structure midway to the back, contained 50 sherds from an Ellison Type 6 biconical urn. These sherds weighed a total of 0.6kg. The average sherd width of the fabric, of which it was made (F2), was 14mm. The remaining part of the posthole was very shallow, 10mm, so it is probable that the whole pot had originally been deposited.

The two other constructional postholes with pottery were both in structure 11. Postholes 4075 and 4066, both located at the back of the hut, one on the right hand side the other on the left, contained pottery. The former had one sherd of Deverel-Rimbury pottery but the latter contained 15 sherds of Post-Deverel-Rimbury pottery although this might not be part of the structure.

Three entrance porches contained pottery: 4068, part of building 11, had two sherds of Post-Deverel-Rimbury pottery 2115, the left hand porch posthole of building 7, contained one sherd and entrance postholes 2404 (left) and 2406 (right) of structure 9, contained one and six sherds of Deverel-Rimbury pottery respectively.

Several other internal features of huts contained sherds: 2807, a posthole centrally placed in the front half of building 9 contained four sherds of Deverel-Rimbury pottery and 33 sherds of Late Bronze Age pottery, 2391, a pit just inside the left hand entrance, contained 24 sherds of Deverel-Rimbury pottery. Pit 4069, located centrally at the rear of building 10, held five sherds of Middle Bronze Age pottery. Context 4015 positioned centrally in building terrace 4003, contained one Deverel-Rimbury and one Post-Deverel-Rimbury sherd.

Major external features containing pottery were in Area A, pit 2054, which had four sherds of Post-Deverel-Rimbury pottery in its uppermost fill. A pond located in Area B, feature 2059, contained nine Deverel-Rimbury and two Post-Deverel-Rimbury sherds, one of which was the only sherd found in the lowermost fill.

The uppermost terraces 2042, 2046, 2048 and 2050 produced considerably more pottery in their fills than the features within them, although the first three, together with 2062, produced very little pottery. Terrace 2048, produced mostly Post-Deverel-Rimbury pottery but all bar one sherd is in the upper fill. Terrace 2050 contained 42 M.B.A. sherds with four Post-Deverel-Rimbury sherds. A greater quantity of pottery came from terrace 2262, including over 70 sherds of Romano-British ware.

The greatest amount of pottery came from terraces 4003 and 4065 located on the southern side of the site. They have large amounts of both Middle Bronze Age and Late Bronze Age pottery as well as Romano-British. However, several of the features contained predominately Late Bronze Age pottery leading to the explanation of a downslope expansion of site use during the Late Bronze Age. Eight of the 30 contexts containing pot have no Deverel-Rimbury pottery. Of this, half have Romano-British pottery and three of the remaining four have two or less sherds, leaving one, feature 4066, a posthole with 25 sherds of Post-Deverel-Rimbury pottery. This feature also has a Late Bronze Age radiocarbon date. Feature 4069 has been described as a hearth above an earlier storage pit 4073. This later context produced a Middle Bronze Age radiocarbon date and the hearth above it contained five sherds of Deverel-Rimbury and 33 Post-Deverel-Rimbury sherds. The pit is near the terrace at the back of the hut (not a usual position for a Middle Bronze Age hearth), so it is possible that the Late Bronze Age assemblage is *in situ* and the Deverel-Rimbury is intrusive. Again this is indicative of peripheral later use of a previous upslope domestic space.

Varley Halls

Varley Halls was excavated by Grieg in 1992 and published in 1997 (Greig 1997). The pottery report was written by Hamilton and published as part of the above work (Hamilton 1997).

The site basically consists of five huts, four Middle Bronze Age and one interpreted as Late Bronze Age.

Only three constructional postholes contained pottery. In Hut 2, posthole 254, belonging to the first phase of the building and centrally situated on the left hand side of the hut, contained one sherd. Posthole 270, from the second phase of Hut 2, again centrally located but on the right of the hut, contained 41 sherds from three different fabrics. Several of these sherds are covered by limescale, presumably from either immersion in or containment of hot water, although this could also be a natural mark as it was deposited on the chalk Downland (Drewett pers. comm.). The third hut with pottery within a constructional posthole is Hut 4 (in Context 351), centrally located on the right hand side of the building. Where entrance porches were identified, none contained pottery.

The terrace of Hut 1 contained 0.71kg of pottery. However, only four sherds come from contexts beneath the colluvium covering the terrace. Hut Platform 2 contained more pottery, 1.5kg of which only 0.3kg was in the colluvium level and 0.3kg not in features but in the layer 221 above the hut floor. 605 of the sherds were in Fabric F1 and between 13-17mm thick.

All the pottery in Hut 3 other than four sherds was in the layers above the hut floor. These sherds were bigger than those in Hut 1, averaging 16.7g per sherd, as opposed to 6.0g for Hut 1. The total weight of sherds was quite low, 0.3kg. This hut had no postholes, leading to dispute as to whether it was indeed a hut and is situated next to a four-post structure.

Hut 4 contained only 0.1kg of pottery.

Wares from Hut platform 5 consisted totally of Post-Deverel-Rimbury pottery, although most of it was found in the colluvium above the hut. Hut 5 also had a virtually straight row of stakeholes running along the top of the terrace in no way mirroring the line of the outside of the proposed hut. However, every posthole and pit, with the exception of two small postholes 370 and 372, contained pottery sherds in a much higher proportion than on other sites. It has been called a Late Bronze Age hut partially on the evidence of Post-Deverel-Rimbury pottery. Although this is evidence of re-use, there is very little to call this a hut. Feature 159 referred to by the excavator as a hole, contained 1.6kg of pottery, a near complete carinated bowl that was the same size and shape as the feature and which contained exclusively Post-Deverel-Rimbury sherds. Several other forms were recognised as Post-Deverel-Rimbury in what appears to be a deposition of pottery. This feature was situated less than 20 m from Hut 5.

Patcham Fawcett A

Patcham Fawcett A was excavated by Greatorex in 1993 and contained pottery reports by Hamilton (Greatorex 1993; 2002; Hamilton 1993). Although the site was severely truncated by ploughing, three possible roundhouses were identified along with several four post structures and numerous other features.

No pottery was found in any of the features associated with the three roundhouses. However, several features from the site contained Later Bronze Age pottery. Of this, 66 sherds were Deverel-Rimbury and 81 Post-Deverel-Rimbury, weighing 0.6kg between them. The only feature to contain both Deverel-Rimbury and Post-Deverel-Rimbury pottery was a circular scoop, probably a small pond. Four other features contained Deverel-Rimbury pottery, pits 251, 253, 275 and 319. Pit 251, was located on the south of the site was intercut by pit 301 which contained 37 sherds of Deverel-Rimbury pottery. These two features also contained struck and fire-cracked flint, burnt sarsen and butchered animal bone and were considered by the excavator to be rubbish pits. Pit 253, a small scoop, located in the north-west of the site, contained 18 sherds of Deverel-Rimbury pottery of 18mm sherd width. Pit 275 in the south of the site contained nine sherds and pit 319, another shallow scoop, contained a single sherd of Deverel-Rimbury pottery. Post-Deverel-Rimbury pottery was often mixed with Romano-British and later pottery. As such only contexts 166 (the pond) and pit 279, a small circular steep sided pit in the south-south-west of the site which contained three sherds of Post-Deverel-Rimbury pottery, are considered secure.

Patcham Fawcett B.

Situated approximately 150 metres west of site A, Patcham Fawcett B was excavated in 1997 by Greatorex, again using Hamilton to write the pottery report (Greatorex 1997; Hamilton 1997a). The excavation produced 722 sherds of Bronze Age pottery, together with 44 sherds of Iron Age and Romano-British pottery. Two later Bronze Age roundhouses were identified along with a four posted building and various other features.

Three constructional postholes from Roundhouse 1 contained pottery. Posthole 126 positioned centrally at the back of the hut, produced 32 sherds of Deverel-Rimbury pottery weighing just over 0.4kg. Posthole 185, positioned centrally on the left hand side of the hut, contained one large sherd weighing 142g and posthole 177, positioned at the right hand side at the back, produced six sherds. No pottery was found in any constructional posthole in Roundhouse 2 but two of the four from the four poster contained sherds. Both the southerly contexts 72 and 74 contained one sherd each. Two postholes associated with the entrance to Roundhouse 1 contained pottery located on either side of the entrance. Contexts 145 and 175 contained two and seven sherds respectively.

Internally in Roundhouse 1, a large pit 137 located centrally on the right hand side, contained a single small sherd. Two postholes situated centrally on the left hand side of the hut, 84 and 90, contained six and four sherds respectively.

The only pottery found in Roundhouse 2 was in context 66, positioned in the rear half of the hut on the right hand side.

Cut 155, situated just south of Roundhouse 1, contained an almost complete Bronze Age pot. 130 sherds weighing 6.3kg were found in a pit that looked like it had been dug specifically to take the pot. The thickness of the sherds from this Ellison type 6 vessel decreases from approximately 10mm at the top to 14mm at the bottom. This pot had contained a variety of artefacts and will be discussed in detail elsewhere.

34 sherds attributable to the Late Bronze Age were found. Twenty four of these sherds were from a fine ware decorated vase in pit 391. This was found with animal bone and worked and fire-cracked flint. Pit 391 is one of three inter-cutting pits in the south west part of the site.

Plumpton Plain

Plumpton Plain, located on top of and on the eastern face of a southern facing spur of the South Downs was excavated in 1934 by Holleyman and Curwen (1935). This article also contained analysis of the pottery by Hawkes (1935). Two separate sites A and B, were excavated and much more data relating to depositional positioning was given than was common at the time.

None of the constructional postholes from excavation A or B contained pottery, with the exception of the hut situated in site B cutting 1, where every hole contained pottery. For the purpose of this analysis, it is assumed that postholes 13 and 14 from this hut, located in the south-eastern part of the building, between which there is an area of worn chalk, form the entrance. Hole 1, a pit on the right hand side of the hut at its rear, contained pottery fragments from several vessels. Hole 2 adjacent to Hole 1 but placed nearer the outside of the hut and slightly on a more central back-front axis, contained pottery, as did all of the internal features. Hole 10 from the same site, enclosure III cutting 2, described by the excavators as a cooking pit, contained pottery.

Several external features also contained pottery. Two holes in cutting 1 of Site A enclosure III contained pottery. These were contexts 2 and 3. On Site B, four of the five holes, 1-4, contained pottery.

Most of the areas described as hut floors contained pottery. Enclosure II cutting 1 had a fair amount of pottery strewn across the hut floor with another scatter to the west of the hut. Most of this came from the front left hand side of the hut if the entrance was located in the south-eastern quadrant. Site A Enclosure III cutting 2 contained the remnants of two vessels. One contained fire-cracked flint, the other was surrounded by it. Both holes were centrally located within the hut.

At Site B cutting 1, large numbers of sherds were distributed not only over the inside of the hut but the area surrounding it. Cutting 2 from the same site contained a good quantity of sherds. Finally cutting 8 from site B had much pottery strewn over the floor of the perceived hut. The pottery from site B is considered later than Site A, with site B containing many Post-Deverel-Rimbury sherds.

Ford

Ford Airfield was excavated in 1999 by Place (2004) and the pottery analysed in that volume by Hamilton (2004).

The pottery assemblage at Ford is Post-Deverel-Rimbury and later. No huts were recognised, though a large amount of pottery was recovered. 3316 sherds of Post-Deverel-Rimbury pottery were recovered from postholes, pits and layers. The most substantial amount of pottery from a layer was context 1085, which sealed several pits, 1111, 1136, 1243 and 1140. This layer contained 613 sherds of mixed fabric and type, sharing some vessels and vessel types from context 1140. So many non-constructional features contained sherds and the relative position of constructional features is unknown, that it is best to rely on the analyst’s interpretation.

Hamilton (2004, 18-38) believed the pottery was deposited soon after breakage in middens close by. Given the unabraided nature of the sherds, she believes they were then undisturbed until excavation. Sherds from the same pot occur in different features which she suggests are therefore communal middens. She is also of the opinion that

‘The distribution of finewares (which relate to a very limited number of vessels), additionally indicates links (deposits from the same source?) between contexts PH1 (914), PH2 (1042), layer 1085, P4 (1137) and T2 (1125). This may suggest proximity to distinct activity areas (associated with eating and drinking)’. Context 1125 is Trackway 2 through which the features cut and are therefore later. It is interesting to note that even on this Late Bronze Age site with very little earlier activity pits, have been set in an earlier used space.

6.6.5 Pottery Distributions

The distributional patterning contained in the above information is confusing. So a wider sample of all the settlement sites in Sussex that contain recognizable round houses and depositional information was constructed. This database was constructed and is shown in Table 6.24.

Table 6.24 Pottery distributions across 58 Bronze Age huts

Site	Cons PH	Internal PH	Floor	Internal Pit
Amberly Mt (Ratcliffe-Densham and Ratcliffe-Densham 1966)	6L 2R	1C	2S	2LF 1RB
Black Patch 2005-6 (Tapper in prep.)	2E	3C	2Cl	2B
Black Patch HP1 (Drewett 1982)	1L			1LB
Black Patch HP4 (Drewett 1982)	3l 2R 3E	6C 2L1R	4S 2Cl	2F 3B 1C
Blackpatch (Ratcliffe-Densham 1957)	1L 2R		1S	1C 1L
Charlston Brow (Field 1939)			2S	
Cock Hill (Ratcliffe-Densham 1961)	12 U		2S	2RB

Site	Cons PH	Internal PH	Floor	Internal Pit
Downsview (Rudling 2002b)	2L 2R 4E	1C	1S	1RB 2C 1CB
Ford (Place 2003)				
Heathy Brow (Bedwin 1982)			2S	
Itford Hill (Burstow and Holleyman 1957)	1R 1L 1E		6S	1R 2B
Mile Oak (Russell 2002)	1L 4E	3C 1L	2S 2Cl	1C 3L 1R
Patcham Fawcett A (Greatorex 1993)				
Patcham Fawcett B (Greatorex 1997)	2l 2R 1E	1L 2C		
Plumpton Plain (Holleyman and Curwen 1935)	2R 2L 2C	4C 3R	4S	
Varley Halls (Grieg 1997)	1L 2R			
Totals	20L 14R 15E	20C 4L 2R	6Cl 27 S	8L 5R 4C 4F 12B
Total Huts	58		9 dirty	

Key:
LC= Left centre LF= Left front LB= Left back L= Left RC= Right centre
RF= Right front RB = Right back R=Right C= Centre CF=Centre forward
CB=Centre back E=Entrance S=Spread, CL=Cluster. Spread and cluster are both terms used for a discrete area of pottery sherds.

Fifty eight Bronze Age roundhouses were studied to see what, if any, depositional patterning could be discerned.

Given the number of huts studied, it seems that only a very small percentage of features contain pottery. This fact is shown even more starkly if you consider that only nine of the huts had four or more internal features that contained pottery and that 27 of the huts (almost half) had floors covered by spreads of pottery based on excavators' comments. For constructional postholes, a total of 49 postholes contained pottery; 20 of these were postholes located on the left of the building, 14 on the right and 15 in entrance locations. Of internal postholes with pottery, 20 had a central location, four were on the left and two on the right. This shows a slightly left hand bias to the distribution but reveals a large number of central postholes containing pottery.

Internal pits show that 12 with pottery were at the back of the hut, four were positioned centrally, four at the front, eight on the left and five on the right. Again there is a slight bias to the left hand side and also the back of huts.

Pottery is either being left *in situ* after abandonment and subsequently broken, or is being deposited in the house after abandonment. The relatively large numbers of pottery found in entranceways, an area associated with posthole burning and central features possibly associated with central hearths, would seem to indicate deliberate deposition. The number of clusters and spreads, thirteen of which appear to be associated with spreads of fire-cracked flint, compared to the number of features containing pottery, would also indicate that careful deposition rather than rubbish dumping was the cause of pottery deposition patterning.

Clusters of pottery either inside or outside would appear to argue that these were special depositions and that the pottery was the product of an individual. These can contain several sherds of different fabrics and decoration, possibly displaying one person's expertise as well as other items which might convey their role. In the Later Bronze Age, these depositions tend to be in purpose-dug pits away from structures, whereas in the Middle Bronze Age, they tend to be on hut floors. This might represent a more nomadic lifestyle in the Later Bronze Age with affinity to place rather than building.

Other than these special depositions, there seems to be a different and less deferential way of disposing of pottery on later sites. They are either left as rubbish on temporary sites or disposed of in pits operating as middens where more industrial activities seem to be taking place and the site has the appearance of being more permanent. Pits from earlier sites that appear to be full of rubbish contained very little pottery.

This is possibly due to wider but more impersonal circulation of certain types of pottery breaking the bond between the user and the maker.

Functional and area usage of pottery is as Seager Thomas (2008) suggested, not fashionable at the moment and from the distribution patterns seen above it would seem very difficult to make decisions about *in situ.* assemblages without looking at the distribution of objects and places used in conjunction with that pottery.

6.7 Loom weights and spindle whorls

6.7.1 Introduction

Burnt or fired clay is another ubiquitous material on Bronze Age sites. At Black Patch 2005-6, 166 pieces were found, weighing in total 2806.8g, an average of just under 17g per piece, of which only eight pieces could be positively identified as loom weight in origin. Pieces of daub were identified on site visually and by micromorphology. Cooking, amongst other activities, can also lead to depositions of burnt clay. For these reasons, only excavations that have positively identified loom weights have been included in this analysis.

6.7.2 Distribution of Burnt Clay at Black Patch 2005-6

Figure 6.40 shows the random distribution of loom weights and daub at Black Patch in the 2005-06 excavations.

6.7.3 Loom weights and spindle whorls on domestic sites

Table 6.25 shows only nine sites with positive recognition of loom weights and spindle whorls. All of these sites are on the Downland. At least four, Black Patch 1977-79, Cock Hill, Hollingbury and Itford Hill have several loom weights in a single hut to indicate specific weaving areas; however none of these have spindle whorls. Spindle whorls are used in the spinning of wool to make yarn. In the Bronze Age, they were small circular objects made of baked clay, stone or bone. Mile Oak, Park Brow and Plumpton Plain B contain both spindle whorls and loom weights. Another two sites have only spindle whorls, Amberley Mount and Plumpton Plain. None of those with specialist areas for weaving have spindle whorls. However, when spinning, you walk around – people do not tend to use specific areas. In spinning in this way, it is almost impossible to do it sitting down, as you need the drop height to twist the yarn (Wileman pers. comm.).

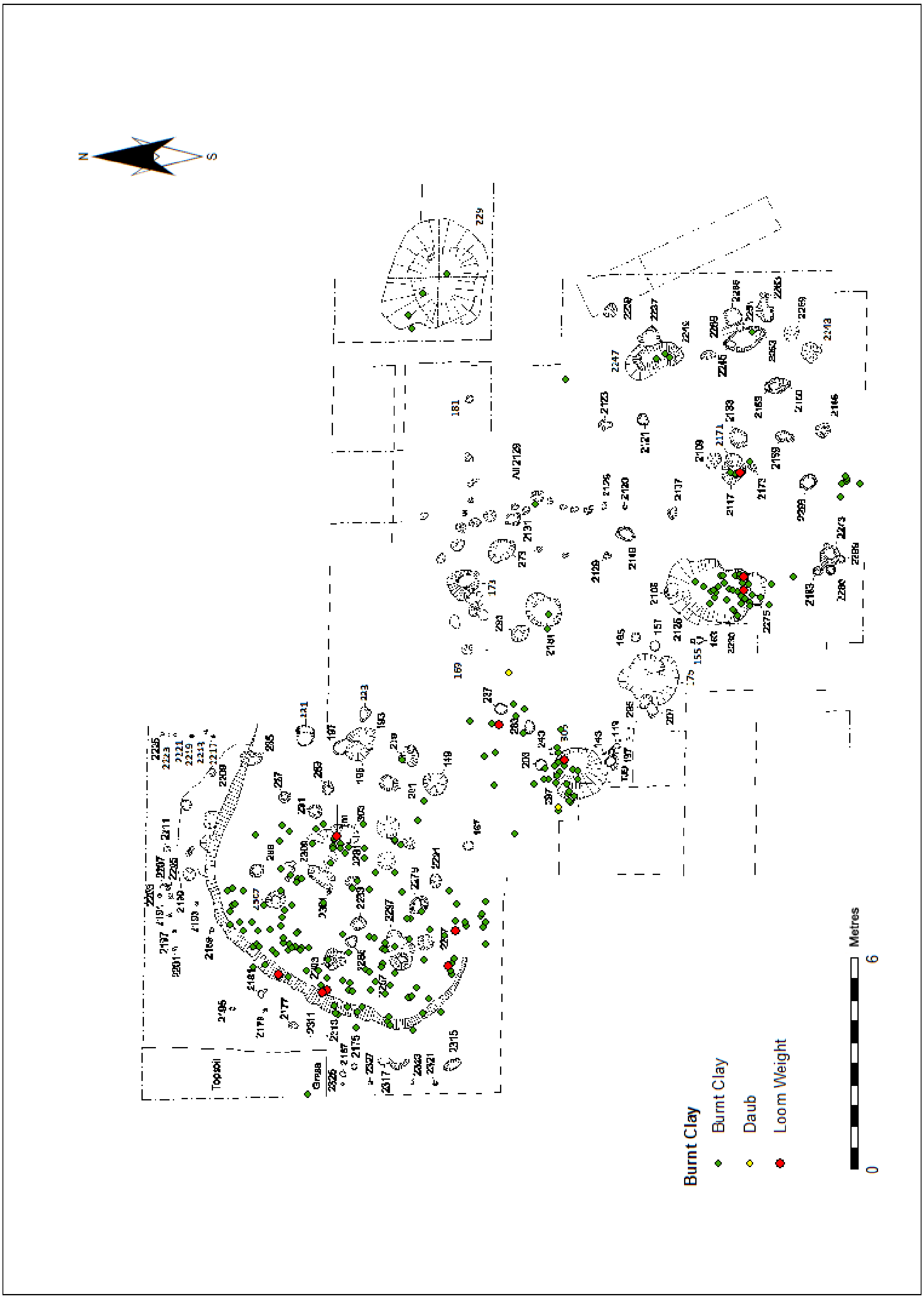


Fig. 6.40 Burnt Clay Distribution Black Patch 2005-6

Although the sample number is small, it is possible that there is specialisation taking place between thread production and weaving on some sites. It must also be noted that a lot of sites, including Downsview, Varley Halls and the two excavations at Patcham Fawcett contain no loom weights or spindle whorls.

Table 6.25 Downland domestic sites with loom weights and/or spindle whorls

Site	Number of spindle whorls	Location of spindle whorls	Number of loomweights	Location of loomweights
Amberley Mount (Ratcliffe-Densham and Ratcliffe-Densham 1966, 15)	1(chalk)	Hut 2 floor back.	None	
Black Patch 2005-6 (Tapper in prep)	None	None	9 – 5 1 2 1	Hut A layers above floor 4 at back in centre; Hut B pit 297 (large pit at back of hut); Hut C pit 2125 (large pit at back of hut); Hut C posthole 2117 in centre of hut
Black Patch 1977-79 (Drewett 1982, 371-2)	None	None	12 – 9 1 1 1	HP4 Hut3 found close to exterior right hand side near back of hut; HP4 Hut3 in posthole just behind right hand side of entrance; HP4 Hut 4 large pit just behind left hand side entrance; HP4 Hut 4 Hut floor centre left hand side of hut
Cock Hill (Ratcliffe-Densham and Ratcliffe-Densham 1961, 100-1)	None	None	10	Hut 1 pitV large pit at back of hut
Hollingbury (Curwen 1932, 1-16)	None	None	?	Hut D 2 rows
Itford Hill (Burstow and Holleyman 1957, 167-212)	None	None	13 – 1 9 1 1 1	Enc iv Hut C posthole 2 back of hut; Enc iv Hut E and F floors; Enc v Hut H floor; Enc vi Hut K floor; Enc vii hut l floor

Site	Number of spindle whorls	Location of spindle whorls	Number of loomweights	Location of loomweights
Mile Oak (Russell 2002, 58-59)	1(chalk)	Trench K Topsoil Mound 3	5 – 3 1 1	 Hut 111 floor; Hut 1 floor; Hut 1 large pit near centre of hut
Park Brow (Wolsely *et al.* 1927, 1-40)	1	Hut AC floor	1	Hut AC floor
Plumpton Plain B9 (Holleyman and Curwen 1935, 28-33)	9	5 Cutting 1 Hut (B-C 1) Floor at back 1 Cutting 11 Hut (B-C 11) floor. 3 Cutting 111 Hut (B-C V111)	1	1 Cutting 1 Hut (B-C 1) floor

6.8 Conclusion

Recognition of activity areas from two-dimensional artefact plots is severely challenged by this research, which has shown the benefits of three-dimensional plots with scientific investigation. Regular cleaning and structured deposition are also indicated by this work further confusing recognition of activity areas. By use of three-dimensional plotting reoccurring patterns of depositional and post depositional processes can then be isolated and interpretations made on the basis of the increased knowledge and checked against the scientific evidence.

Chapter 7. Ecofacts

7.1 Plants

7.1.1 Introduction

In this section plant assemblages are considered, including crops, to ascertain the agricultural methods used in the Later Bronze Age. This was achieved by studying the charred seed remains from cereal crops found on Later Bronze Age sites. Remains of other non cereal seeds were also studied to analyse their potential use as herbal medicines, use in craft activities, or their value as a supplementary food source for humans and animals.

The identification and quantification of plant remains on archaeological sites has been recognized as important for many years (Helbaek 1952 and 1957; Hillman 1981; Hinton 1982; Engelmark 1985; van der Veem 1992; Viklund 1998; Bogaard 2004). Investigations have typically taken one of two forms. Firstly, there is the broad grained approach, whereby plant remains from excavations, be they carbonized, waterlogged or merely indentations on pottery, have been identified and usage inferred (Richmond 1999; Campbell and Straker 1999). Secondly, the functional attributes of plants contained in a single context (usually charred grain plus attendant weed species) are examined statistically. Flowering time, canopy size, root formation, seed size, leaf shape and other characteristics for each type of seed found in the assemblage, are computed to predict the agricultural conditions under which the assemblage was grown. Time of sowing, irrigation rotation and manuring policy are deduced from the make up of the assemblage (Jones 1984; Bogaard 2004).

Unfortunately, no assemblages found in Sussex to date contain quite enough varieties for the stringent restrictions of a formal statistical evaluation to be met. However, several finds of charred seeds are close enough in number for non-statistical interpretation (Bogaard pers. comm.).

It is hoped that, by combining this analysis together with a fine-grained study of plant remains from a number of sites, an understanding of plant usage in the Later Bronze Age and its implications for everyday life in the Later Bronze Age will be achieved.

7.1.2 Methodology

The functional and use attributes of as many plants identified as possible will be collated. Both quantitative and qualitative methods will be adopted as appropriate whenever possible and attributes will be taken from Grimes *et al.* (2007). However, when other sources are used, these will be specified. It should be noted that data is not available for all the species that have been found. Where acceptable, proxies from similar species are used. A reference to the appropriateness will be stated. The analysis will start with Black Patch, then move on to other Downland sites and finish with other sites in Sussex.

7.1.3 Black Patch

Drewett's excavation (1982) revealed four pits containing carbonized grain, as well as numerous seeds found on hut floors and in post/fence holes. These were examined by Hinton. The carbonized grain was bulk sampled, subjected to flotation and sieved. The resulting percentages of cereal seeds for each sample was recorded, as was the absolute number of each type of weed seed found contained in the cereal. For contexts containing few seeds these were recorded as absolute quantities of all varieties (including cereal grains) per context (Hinton 1982, 382).

Unfortunately, the recent excavations at Black Patch recovered relatively few seeds, even though samples were wet sieved and more disappointingly, no cache of carbonized grain was found. Thus, the analysis of plant remains will concentrate on the earlier excavations, with consideration given to findings from the later excavations where relevant.

Seeds from the 1977-79 excavations

The types of deposit identified at Black Patch can be split into four separate groups.

Firstly, pit deposits that appeared to Hinton (1982 384-5) to be homogenous, where the carbonization of the assemblage was a single event; secondly, pit deposits which were heterogeneous and the result of a number of carbonization events; thirdly, assemblages collected over an area, for example a hut or barrow floor and lastly, seeds collected from individual postholes.

There are several ways plant remains can be brought onto a site for possible inclusion in the contexts excavated on that site. Firstly, as deliberately collected plant material for craft, medical or other on site activities. Secondly, as accidental intrusions bought on site in clothing, by animals, either in their fur or dung, by birds, by meteorological events, such as wind and rain, or by the later burrowing activities of animals such as rabbits and earthworms (Canti 2003), lastly, as products or by-products of crop harvesting.

Whilst the first two consist of easily understood processes, the last consists of complex relationships of production, storage and consumption. Hillman (1981, 124-5) argues that these processes are too difficult to observe directly from seed assemblages or the contexts in which they occur, with such observations often leading to ambiguous or impossible functionality. Whilst he feels there is a place for such work, provided it is followed up by experimentation, he feels that interpretation of ethnographic models provides a much better way of explaining past functionality. Hillman (1981, 128-130) bases his ethnographic model on farming practices in the Near East, where crops grown in prehistoric times in Northern Europe are still grown and archaic methods of husbandry are still, or were until very recently, exercised. His influential ethnographic techniques were used not only by himself but also in major works by Hillman (1984a; 1984b; 1985); Jones (1984); van der Veem (1992); Viklund (1998); and Bogaard (2005).

Hillman (1981, 131-137) produced not only flow diagrams of the harvesting procedure but also drawings to explain the terms used in them. The processes involved will be briefly described, firstly for glume wheat such as emmer, spelt and einkorn and secondly for free-threshing cereals including bread wheat, rye and barley.

The crop is first harvested either by reaping or uprooting. It is then left to dry usually in the field. Having dried sufficiently, it is taken to a processing area to be threshed. This breaks the straw from the ear into component spikelets. After the removal of undamaged straw, the threshed corn is raked to remove as many straw fragments as possible. It then receives its first winnowing. This is often described as the start of the cleaning process. There are many different methods of winnowing, including throwing the crop into the air and letting the wind separate the remaining straw, awns and lighter weed seeds from the spikelets of corn and heavier weed seeds and heads. The partially cleaned crop is then sieved to remove the remaining weed seeds. Seed grain is removed at this stage and further cleaned. In wet climates the remaining grain may then be dried again before being placed in the bulk spikelet store. Hillman stresses that from this point the domestic processing in wet climates is done piecemeal, day to day.

Domestic processing begins with the grain being parched to render the chaff brittle. It is then pounded to release grain from the spikelets and break up seed heads. It is then winnowed and sieved again leaving prime grain, many spikelet forks and weed seeds that are the same size as the grain. This product can be stored. Finally, this is hand-sorted to leave clean prime grains.

The process for bread wheat, rye and barley is similar to start with. However, the aim of threshing is to free the grain from the rachis of the ear, rather than breaking the ear into its component spikelets. Hulled barley and oats require two further stages after hand-sorting.

The still hulled grain needs to be de-husked in loosely set rotary querns, or by pounding with wooden or stone mortars. The freed husks then have to be removed either by winnowing or flotation.

Any of the heating processes used to dry the grain could cause accidental carbonization. The composition of the charred assemblage should enable the identification of which stage in the process the grain had reached.

By looking at the composition of plant remains from the ethnographic record, Hillman was able to devise a series of classifications and models to identify ancient agrarian practice. These models will be referred to again as part of the analysis of Bronze Age Sussex seed assemblages (Hillman 1984a, 1-42).

Before examining the seed assemblages in detail, it would be helpful to look at the possible circumstances that led to their carbonization and deposition.

There are six main reasons for a seed assemblage to become carbonised.

1) Grain stored above ground in a building will be carbonized if the building burns down.
2) Grain may be deliberately burnt if contaminated by disease or an abundance of weeds.
3) Grain may be deliberately carbonized prior to structured deposition.
4) Harvesting activities, for example secondary drying or parching in the storage area, might result in accidental burning and carbonization.
5) During food preparation, for example accidental spillage on to a cooking fire, may result in some carbonization.
6) Grain is used as a fuel.

Use as fuel is unlikely at Black Patch given the large proportion of valuable grain and accessibility of other fuel materials.

Early investigations into the effects of charring were inconclusive. Changes found in the morphology of grain seeds after charring varied dramatically between researchers, possibly due to different timings and temperatures being used for carbonization to take place (Helbaek 1952; Hopf 1955; Renfrew 1973).

Experiments into the carbonization process by Wilson (1984); Gustafsson (1989); Boardman and Jones (1990); and Viklund (1998) have separately shown that burning conditions play a major part in the resulting post-carbonization assemblage However, inconsistency of methodology has led to discrepancies in some results.

Wilson's (1984, 201-208) experiments consisted of assemblages of 12 different species of seeds carbonized at three different temperatures, mixed with and without soil and starting with wet seeds and dry seeds. This gave her 12 assemblages of carbonized seeds. She found that not only were there different survival rates but also varying effects on the size and shape of the seed. Given that most charring incidents will contain varying levels of temperature, oxidization and initial conditions, she concluded that it would be very difficult to analyse the initial composition of a seed assemblage, especially if they contained seeds whose recognition depends on size and/or shape. Gustafsson's (1989, 37-40) experiment, unlike Wilson's, who used an oven, was carried out in the field and was primarily concerned with the ability of seeds to become charred and retrievable after suffering the effects of a house fire. A section of an Iron Age longhouse was reconstructed. A combination of 100 weed seeds and 1000 seeds from cultivated plants were mixed into the mud on its floor and similar quantities were placed on top of the floor in another part of the construction. A third area was covered with meadow seeds and grains of *Triticum aetivium* and *Chenopodium album* were placed on the roof, to simulate stored grain. The whole construction was then burnt down and soil samples collected for flotation and subsequent analysis of the plant material. As the fire had been stronger in the centre of the construction, two different temperature regimes could be analysed. The results showed that a higher temperature was needed for carbonization when the seeds were mixed with mud and that the seeds on the roof withstood the fire much better than expected.

Viklund's (1998, 104) experiments were more comprehensive than the two described above. She wanted to consider the effects of a house fire on the different components of stored grain, which is threshed grain, weed seeds and chaff. The composition of the assemblages was based on genuine harvests and only weed seeds commonly found in the Swedish Iron Age were used. Of the 20 species used, ten appear in Bronze Age Sussex assemblages, of the other ten, only one is not mentioned in Grimes *et al.* (2007)

and one is a cliff edge plant but the other eight are arable weeds. Each sample consisted of 10ml of material. Three-quarters contained mixed sized grains of hulled barley and one quarter of chaff and weed seeds. The weed seeds contained in the sample were ten individual seeds of each of the varieties chosen to represent the Swedish Iron Age. The assemblages were mixed with sand and subjected to six different heating procedures. Four involved slow heating for ten minutes in steps of 50º, 100º, 200º or 250º etc. and then 5.5 hours at 250º, 350º, 450º or 550º. In the other two, the samples were placed into a pre-heated oven at temperatures of 300º and 500º respectively and kept there for 5.5 hours. (All temperatures are given in degrees centigrade).

For the slow burning experiments, a large proportion (approx. 80%) of the grain carbonized only at the lowest temperature. The grain that was carbonized retained its shape and size.

For the other three experiments, around 70-80% of the grain blistered or broke, leaving the rest carbonized. Carbonization rates for the pre-heated oven were much higher, with 70% of the sample charred and recognisable, 20% insufficiently charred and 10% deformed.

Results for the weed seeds differed as to species. Oily seeds are more easily destroyed by charring. Two of the seeds commonly found in Sussex behave totally differently.

Chenopodium album is very susceptible to damage, whilst *Gallium aparine* is highly resistant. Seeds were more likely to survive carbonization at lower temperatures and only two, *Capsella bursa-pastoris* (which does not feature in Sussex assemblages) and *Rumex acetosella* (which does), had fewer than five seeds recognizable after heating above 350º.

Again at 250º, most (90%) of the chaff and awns became carbonized and appeared 'quite tough', at 350º, all of the chaff was carbonized, at 450º, whilst all of the material was carbonized, 'it seemed much more fragile' and at 550º, a small percentage of the chaff, approx. 5%, became carbonized to an ash-grey and extremely fragile state'. Boardman and Jones' experiments (Boardman and Jones 1990, 4-5) confirmed suggestions on the effects of oxidation as far as increasing the amount of charring and subsequent damage. Their results at low temperatures were comparable to Viklund's. They found that, whilst glume wheat retained its form at temperatures of up to 550º, barley started to become 'a conglomerated mass from 350ºC'.

As with harvesting, temperature and position of storage play a defining part in the interpretation of charred assemblages. Until more comprehensive testing has been completed, there will be an element of doubt in observations made about charring events, especially those at high temperature.

Grain

The deposits from both Hut Platform 4, Hut 4, pit 3 and Hut Platform 1, Hut 1, pit 12 from Drewett's excavations were interpreted by Hinton as being the result of separate but discreet accidental burning or charring events. This was on the basis that the samples were homogenous in nature as the minor constituents (weed seeds, etc.) were consistent throughout the sample. Pit 3 contained 21kg of burnt grain and pit 12 19.5kg. Both pits were estimated to contain about 2 million grains.

Both samples contained a majority of barley seeds (96% in pit 3 and 63% in pit 12) with a lesser amount of emmer wheat (4% in pit 3 and 34% in pit 12) and even smaller traces of spelt (<1% in pit 3 and 3% in pit 12). Additionally, 50g samples from pit 12 contained, on average, 14 broad bean seeds.

The barley was identified by Hinton as being different varieties of *Hordeum vulgare* L. *emend* LAM. These are six eared hulled varieties of the nodding type, with ears of differing degrees of laxity. Very few spike fragments were found but the barley had apparently not been totally de-husked as a large proportion of the debris was minute fragments of husks and a few of the grains still retained part of their husks.

The vast majority of the wheat is *Triticum dicoccum* SCHŰBL, commonly known as emmer, with much smaller amounts of *Triticum spelta* L. There is also a possibility of a tiny amount of *Triticum monococcum* or einkorn, in the sample from pit 12 for, whilst no actual seeds were found, two rachis characteristic of einkorn were found. Both deposits contained a ratio of about 3:1 for grain seeds to spikelet bases.

It is unlikely that the crops of barley and emmer had been grown together, as they prefer different soil types. Barley prefers a soil less rich in nutrients than glume wheat and tends to lodge in too nitrogenous soils. Wheat is intolerant of wet soils (Greis 2002, 10-12). The small percentage of spelt in pit 3 and beans in pit 12 could have been the result of different crops grown in previous years. The beans had been freed from their pods.

Hillman's model shows that the barley could have been at any stage of processing between threshing and hummelling and that the wheat had probably been parched and pounded but that the spikelets had not been totally removed from the grain.

The absence of chaff and straw, which would have carbonized at lower levels (250º-350º) and the presence of spikelet bases, which would not have been destroyed until higher temperatures (500º+) had been reached, would indicate that the chaff and straw had been removed unless a temperature between the two caused the carbonization of the grain. The inconsistency of the results between Viklund and Boardman and Jones is between these temperatures. If Boardman and Jones are right about the effects of temperature on barley, a lower temperature would be indicated. Charring appears to take place either when grains are subjected to low heat for a long period, or when they are placed into a high temperature (Viklund 1998). The two most frequent accidental events that would fit the bill would be overparching or fire in the storage area, the first being exposure to low temperatures for a long period and the second being the immediate exposure to high temperatures. Given that, in addition to Boardman and Jones' results there is a lack of evidence of a large conflagration, it is unlikely that a fire in the storage area was the reason for the charring. However, if the crop was covered by debris from the building, it would have burnt under reducing conditions, possibly explaining why the barley component was still recognisable as individual grains. This leaves parching as the only probable accidental reason for carbonization. Experiments by Meures-Balke and Lüning (1992) clearly show that, for glume wheat in the Neolithic LBK culture, parching was neither necessary nor visible in the archaeological record. De-husking with a wooden mortar was found to be more than twice as efficient as a saddle-quern and 20% quicker. They estimated that the de-husking of 5kg of cereal (the daily need for a family of five) would take one person three hours and twenty minutes. This does not include the further cleaning processes required. Although the effect of pre-heating showed a small positive effect on the de-husking process, the time spent on pre-parching the grain would have been untenable. As proteins are denatured if heated above 50-60º and numerous enzymes are harmed above 40º, grain subjected to high temperatures is only suitable for porridge. Grain heated to a high degree is also unsuitable for sowing. For these reasons, Meures-Balke and Lüning (1992 341-362) do not feel, at least for the LBK, that carbonization as the result of a parching accident is feasible.

Weed seeds contained in the grain deposits

The weed seed assemblage for the 1977-9 excavation was analysed by Hinton (1982) and the 2005-6 assemblage by Allott (2009). Very few weed seeds have survived through to the stage of deposition at Black Patch (Drewett's excavation 1977-79). Pit 3 contained a total of 14 seeds from 10 different species per 50g sample and pit 12 contained 39 seeds from 15 different species. Viklund (1998, 55-56) found an average of 11% by weight of weed seeds in five samples of threshed grain in experimental studies. Hillman (1984) offers the ratio of less than one in twenty to define partially cleaned grain. The ratio here is over ten times greater. The main difference between the two deposits is the percentage of emmer wheat being 4% in pit 3 and 34% in pit 12.

There are many works on the effect of the harvesting processes on the weed seeds found in depositions of burnt grain, most of which are discussed in detail in Reynolds (1981; 1984); Hillman (1984); Jones (1984); and Viklund (1998). In these studies there does seem to be general agreement on the effects of harvesting on the type of seed and other material that is likely to be removed at each of the stages of production.

Here is a brief summary.

1) Reaping or uprooting. This can be done at either the base of the plant or just under the ear. The latter method removes all seeds from low growing weeds. The straw is processed separately and will contain weed seeds from plants with a diversity of heights.
2) Threshing. This removes straw, chaff and light-weight seeds, as they are less likely to have the momentum to free themselves from the grain and heavier seeds.
3) Winnowing. This separates the grain, heavier and less aerodynamic seeds from lighter seeds. Most seeds will still be included in the grain at this stage.
4) Grading, either by sieving or flinging. This removes most of the weed seeds smaller than the grain. It also removes straw. Further cleaning in the form of hand sorting to remove the larger weed seeds may also take place.
5) De-husking of hulled grains. This leaves just grain. Glume wheat needs parching before the removal of spikelets can take place.

Inevitably, some weed seeds will survive all the above processes. These weeds can give clues not only to the stage in the harvesting process the crop had attained when charred but also some of the cultivation practices employed in growing the crops. The small number of seeds remaining in the crop indicates that they had been cleaned. The large amount of husk and spikelet fragments shows the grain had not been totally freed and was possibly in the middle of that process.

The first item of note, with respect to Black Patch is how similar the two weed assemblages are, given the major discrepancies in the proportions of the various crop components. Eight of the species appear in both assemblages in very similar proportions. Pit 3 contains one extra species (oats) whilst pit 12 contains five.

Both assemblages contain weed seeds from plants of different height, indicating the crop was either plucked from the ground or reaped with a sickle at a low level. The absence of culm bases could have been as the result of the charring event or the use of a sickle to cut the straw low down.

Hillman's (1984) ethnographic model shows hand sorting to be the last method for ridding grain of weed seeds. The high ratio of clean grain to weed seeds shows that the crop has been hand sorted either by weeding before de-husking, or at both stages. Given the high fraction of spikelet forks (which would not be affected by weeding) that are in the samples and the low level of weed seeds, it is probable that the crops, particularly the emmer, were weeded in the field.

In spite of the sparseness of weed seeds in the Black Patch crop assemblages, some comments can be made. The occurrence of at least two crop types in each confuses issues of a husbandry nature for each individual cereal. Barley and emmer prefer light, drained soils. However, barley is much more tolerant of varying soil and climatic conditions. It does less well in acid soils and tends to lodge in fertile nitrogenous soils. Emmer likes nitrogenous soils but grows poorly in wet soils.

Both can be planted in autumn and spring (Greis 2002, 11-12) and all of the weed seeds in both samples grow well in alkaline soils. Only *Medicago lupulina* prefers an infertile soil and is nitrogenous. It appears in both samples, as do *Vicia tetrasperma* and *Vicia hirsute,* which are nitrophilous.

Not surprisingly, both pit samples contain evidence for autumn and spring planting and for fertile and non-fertile growing conditions. Both samples contain cleavers - *Gallium aparine,* a weed that germinates in the autumn. This weed is widely used as an indicator of autumn sowing (see particularly Reynolds (1984) but also Greis (2002)). However, using FIBS (Functional Investigation into Botanical Species) attributes as there were not enough varieties to perform a full analysis (Bogaard 2004), pit 3 contains eight weeds and pit 12 contains 12, with late and long flowering periods and spring germination. Both attributes are indicative of spring sowing. Pit 3 contains no other weeds but pit 12 has three further examples of autumnal sowing indicators (autumn germination with short early flowering periods) (Jones *et al.* 2005, 496).

Given the different seasonal attributes of the weeds found, even though they are few in number and their different growing requirements, it is safe to assume the crops were raised separately but stored together.

It would be useful on the basis of the above to conclude that the increase in autumn sowing indicators corresponded with the increase in the proportion of wheat, thus suggesting that wheat was sown in the autumn. However, given the relatively small differences and the number of samples, this is not possible.

It would be reasonable to suppose that the two crops were either both being sown in the autumn and spring or that one was autumn sown and the other spring sown. The first possibility is unlikely as, given different harvesting periods for the same crop if sown in the autumn and spring, they would not have been processed together. There are also small variations in the fertility of the soil preferred by the weed seeds. This indicates the possibility that the two crops were either grown in different areas of the Downland, perhaps emmer on top of the ridge and barley in the valley, or grown in a fallow rotation, perhaps with the *Vicia fabia* as a third crop. The second possibility has already been raised by both Hinton (1982, 387) and Greis (2002, 36).

Other FIBS attributes of a generally high SLA (specific leaf area), low DMC (dry matter content of leaf), tall broad canopies, thin leaves, flowering late into the season, partial tolerance to shade, would indicate fertile irrigated weeded and hoed plots on a legume/fallow/cereal rotation. As stated before, the small number of seeds and the presence of more than one crop show the depth of evidence to back this up is minimal.

Both deposits were placed on the bottom of their respective pits and were pure grain plus the few weed seeds identified by Hinton with the exception of pit 12, which contained a few chalk lumps. Pit 3 and pit 12 also contained pottery, worked flint and loom weight fragments. At the top of pit 3, a bronze razor was found.

Other pit deposits of grain

Pits 4 and 5 in Hut 3 contained much smaller quantities of grain, 700g and 1500g respectively. Rather than it being pure seed, it gives the impression of having been swept from a hearth, particularly as the grain has been burnt at higher temperatures under oxidising conditions, as it has been much more damaged by heat. Pit 5 contains sloe which is not an arable weed (Hinton 1982, 387-8). There is a much more even balance of barley to wheat, 43:57 and 67:33 in pits 4 and 5 respectively. Both pit 4 and

5 contained pottery and worked flints and pit 5 contained loom weight fragments. Both deposits were placed on the floor of their respective pits.

Both samples have approximately twice as many seeds as the pure crop depositions. This is made up by the addition of a few more varieties but mostly greater numbers of the same seeds that occur in the crop deposits.

In his economic discussion, Drewett has already given several examples of weeds occurring at Black Patch that could have had culinary uses. *Stellaria, Potentilla, Atriplex* and *Gallium aparine* can be eaten. *Brassica nigra* can be used as flavouring (Drewett 1982, 341). As can be seen from Table 7.1, a list of plants identified on Bronze Age sites on or near the South Downs, most of the seeds have medicinal uses and at least two, G*allium mulago* and *Gallium aparine,* could be used to make dyes.

Table 7.1 Use of Plants identified on Bronze Age Sites on or near the South Downs. (Sources archived)

Name	Uses	References
Hordeum vulgare	1. Stomach problems, poultice 2. Digestive disorders and bronchitis	1. Culpepper 1826, 15 2. Talbot and Whiteman 1996, 63
Triticum dicoccum	1.Many uses including dog bites and bloody flux mentioned in Dioscorides and Pliney for chills and ring worm	1. Culpepper 1826, 195-6
Triticum spelta	,,	
Vicia faba	1.Useful against the stone and provokes urine	1. Culpepper 1826, 16
Brassica Nigra/Sisymbrium officinale	1. Paste for ulcers. Aching joints. Emetic for vomiting. Syrup for coughs and colds. Stimulate circulation 2. Antidote for poisons 3. Rheumatism, sciatica and neuralgia. Chilblains	1. Talbot and Whiteman 1996, 145 2. Culpepper 1826, 100 3. Gordon 1980, 121
Plantago lanceolata	1. Insect stings, hay fever- antihistamine, wounds, teeth and gum infections, digestion, food (dietary fibre) 2. Ague (fits)	1. Brunton-Seal and Seal 2008, 127 2. Culpepper 1826, 120
Viola	1. Many different uses for many different varieties	1. Culpepper 1826, 191

Name	**Uses**	**References**
Cerastium stellaria	1. Feeding poultry 2. Anti-inflammatory	1. Brunton-Seal and Seal 2008, 26 2. Bremner 1988, 246
Corylus avellana	1. Varicose veins, circulatory and menstrual problems and haemorrhoids	1. Talbot and Whiteman 1996, 116
Chenopodium album	1. Rich in fat and albumen. Used as food supplement	1. Jekka 1997, 64
Atriplex hastata/patula	1. Sore throats, gout and jaundice. 2. Vegetable 3. Headaches and constipation	1. Jekka 1997, 46 2. Culpepper 1826, 108
Medicago lupulina	1. Fodder	1. Gordon 1980, 9
Vicia tetrasperma	1. Small pox and measles	1. Culpepper 1826, 193
V.hirsuta		
Rubus fructicosus	1. Food. Good source of vitamin C 2. Diarrhoea, mouth ulcers, sore throats, colds, flu, fevers, gingivitis, headaches and wounds 3. Anti-dote to snake poison 4. Gout	1and2. Brunton-Seal and Seal 2008, 6 3. Culpepper 1826, 23 4. Talbot and Whiteman 1996, 76
Potentilla	1. Cuts, wounds, sore throats, diarrhoea, digestion inflammation and fever 2. Starchy roots used as food 3. Dye 4. Anti-inflammatory	1and2. Talbot and Whiteman 1996, 86 3and4. Culpepper 1826, 152
Polygonum Aviculare	1. Mouth and nose bleeds, 'women's problems', urinatory problems, cool inflammation and heal wounds	1. Culpepper 1826, 82
P. arenastrum	*As for Polygonium aviculare*	
P. convolvulus	1. Purgative 2. Laxative	1. Culpepper 1826, 156 2. Talbot and Whiteman 1996, 69
Rumex	1. Detoxifier 2. Respiratory problems, anaemia, cooking	1. Brunton-Seal and Seal 2008, 146 2. Talbot and Whiteman 1996, 99
Urtica dioica	1.Tonic, anaemia, bleeding, diarrhoea, gout, fluid retention, blood pressure problems, coughs allergies, breast milk production skin, high blood sugar, cuts , wounds, hair tonic, kidney problems	1. Brunton-Seal and Seal 2008, 114-119 2. Culpepper 1826, 106

Name	Uses	References
	and aphrodisiac 2. Leprosy, skin, joints and lungs	
Lithospermum arvense	1. Possible use in urinary infections	1. Talbot and Whiteman 1996, 112
Galium molugo	1. Red dye	1. Phillips 1977,78
G. aperine	1. Tonsillitis, burns, open sores, blisters, swollen glands, fluid retention breast cysts, urinatory problems and lymphatic cleanser 2. Staunch bleeding, stimulant and red dye	1. Brunton-Seal and Seal 2008, 30-3 2. Talbot and Whiteman 1996, 109
Tripleurospermum maritimum ssp *indorum*	1. Dissolve tumours and ease pain	1. Culpepper 1826, 102
Carex	No reference found	
Lolium perenne	Fodder	
Avena fatua	1. Insomnia, depression, loss of appetite, nervous exhaustion, luM.B.A.go, sciatica, leprosy and laxative	1. Talbot and Whiteman 1996, 148
Avena awn frags		
Stellaria media	1. Food. 2. Eczema and psoriasis. 3. Itches, bites, stings, bruises, splinters and shingles	1. Phillips 1977, 14 2. Bremner 1988, 27 3. Brunton-Seal and Seal 2008, 27-29
Sherardia arvensisis	1. Red dye	1. Wilson and King 2003, 152
Linum usitatissimum	1. Broken bones, uses in physic and surgery 2. Seeds poisonous in quantity	1. Gerrard 1985, 126 2. Talbot and Whiteman 1996, 105
Prunus spinosa	1. Tonic, laxative, bladder, kidney and digestive problems	1. Talbot and Whiteman 1996, 71
Echium vulgare	1. Red dye, small pox and puncture wounds 2. Antidote to snakebite and poison	1. Gerrard 1985, 186 2. Culpepper 1826, 192
Anisthanasterilis	No reference	
Ranunculus ficaria	1. Poisonous, piles	1. Bremner 1988, 246.
Stahcys palustris	1. healing agent	1. Phillips 1977, 128
Ranunculus acris	1. Poison in large doses-“one to be wary of”	1. Gerrard 1985, 226
Fumaria officinalis	1. Liver complaints	1. Culpepper 1826, 223
Brassica oleracia	1. Adder bites, female periods	1. Culpepper 1826, 30

Name	Uses	References
Rumex acetosa	1. Poisonous in large doses 2. Constipation, jaundice, fever, urinatory problems, liver, kidney, constipation and boils	1. Phillips 1977, 36 2. Talbot and Whiteman 1996, 176
Rumex crispus	1. Skin complaints, liver and respiratory problems	1. Talbot and Whiteman 1996, 99
Arrehenatherum elatius	1.Plant of disturbed ground dated to late 5th millennium B.C at Raunds	1. Campbell and Robinson 2007, 19-38
Juncus effuses	1. Smoke inhalation 2. Use with caution	1 Talbot and Whiteman 1996, 170 2. Culpepper 1826, 137
Papaver	Many uses for different types including narcotic (opium poppy)	
Stellaria graminea.	1. Pain relief	1. Gerrard 1985, 18
Linum catharticum	1. Purgative, extremely poisonous in large doses	1. Phillips 1977, 68
Conopodium majus	1. Food and aphrodisiac	1. Culpepper 1826, 37
Daucus carota	1. Anaemia, kidney liver and bowel problems, kills intestinal worms 2. Aids conception 3. Hallucinogenic	1.Talbot and Whiteman 1996, 82 2. Culpepper 1826, 34 3. Buchanan 1979
Anagallis arvensis	1. Delirium and for maniacs Still used today but only with medical advice	1. Culpepper 1826, 117 2. Gerard 1985, p.141
Veronica hederifolia	1. Liver complaints	1. Gordon 1980, 69
Veronica serpylliholia	As above	
Sonchus arvensis	1. Diuretic	1. Talbot and Whiteman 1996 ,178
Pisum sativum	1. Food	1. Gerard 1985, 265
Raphanus raphanstrum	1. Food 2. Coughs, rheumatism, gout and digestion 3. Diuretic	1and2. Talbot and Whiteman 1996, 163 3. Cullpepper 1826, 130
Vicia satvia	1. Fodder	1 Talbot and Whiteman 1996, 185
Lathyrus	No reference	
Trifolium sp clover	1. Skin problems, liver, gall bladder, indigestion, bronchitis, whooping cough, aches and pains, cancerous growths, wounds and bites	1. Talbot and Whiteman 1996, 88

Name	Uses	References
Euphrasia	1. Eyes, weak brain and memory	1. Culpepper 1826, 56
Solanum dulcamara	1. Necklace of berries found in Tutankhamen's tomb 2. Difficult disorders 3. Amateur medical use is dangerous	1. Philips 1997, 48 2. Culpepper 1826, 105 3. Gordon 1980, 21
Solanum nigrum	1. Poisonous	1. Phillips 1997
Asteraceae indet	1. Wounds	1. Culpepper 1826, 51
Valerianella dentate	1. Food, corn salad	1. Mears and Hillman 2007, 220
Geranium sp	1. Internal wounds, bruises, haemorrhages, all fluxes and ruptures in children	1. Gerrard 1985, 224

Other weed seed finds

A total of eight seeds of blackberry were found. Six were on the floor of Hut 3 and one each in unspecified postholes from Huts 2 and 3. Part of a hazelnut was found in posthole 220 (Drewett 1982, 388).

Deductions can be made from the location of weed seed finds (Engelmark 1985; Viklund 1998). Hinton (1982, 386) claims there could be some significance to the distribution of seeds in Hut 3 in that they occurred in the posthole of the porch and spread westwards into the middle of the hut. Seeds were also scattered around pits 4 and 5. She states it is impossible to know the time period over which the seeds were collected but they possibly indicate some processing near the porch, or seeds dropped on the way to deposition in pits 4 and 5.

The most commonly found seeds are from the two knotgrasses, the bindweed and the goosegrass, there being 31, 21, 26 and 50 respectively.

As can be seen from Table 6.1 of plant uses, the medicinal powers of these plants cover a wide range of everyday problems.

Seeds from 2005-6 excavations

Far fewer seeds were recovered in these excavations than in Drewett's excavations.

What was found was often not identifiable to the level of the previous excavations and produced nothing unexpected. A wide variety of wheat cereal grains were found across the site but in no identifiable pattern. The possible implication of this is that different crop types were grown in the area and brought back to the site for processing, although care has to be taken with this idea, given the small size of the assemblage and the time period that could have been involved.

The weed seeds included *Plantago lanceolata, Vicia* (vetch/taire), *Polygonum* (knotgrass) and *Rumex* (dock). A fruit similar to a fumitory fruit was also found (Allott 2008a).

A small flot sample from context 223 contained several charred seeds and plant macrofossils. These included *Brassica* sp. (mustards), *Papaver* sp. (poppy), *Viola* sp. (violet), *Geranium* sp. (geranium) various Gramineae (wild grass) seeds and wild or cultivated stem fragments, a prickle (such as those found on brambles), several buds and twig fragments. No charred cereal seeds or conclusively identified cereal chaff are present in the assemblage. At first sight this would appear to be the product of the sieving stage of the crop harvesting process. However the lack of rachis fragments and glume bases and the presence of prickles, buds and twigs indicate other processes being performed here (Allott 2008b, 1). All the seeds found at Black Patch are still thriving in the type of environment found on the Downs today. Only one, the *Brassica nigra,* prefers a wet or riverside habitat.

7.1.4 Itford Hill

A much smaller deposit was found at Itford Hill, a Later Bronze Age site some 5km west of Black Patch. It contained about a litre of grain weighing just over 5kg. It was found in a storage pit 26 in Enclosure iv Hut E and was piled conically in the centre of the pit. It was almost all a variety of six-rowed hulled barley (there were also five grains and three glume bases of emmer). Some of the grains indicated some form of deficiency. The presence of numerous internodes, awn fragments and a bit of straw in the deposit indicates that it had not been threshed. There are no culm bases, which would indicate the use of a sickle (Helbaek 1957, 206). The rest of the pit contained no artefacts.

It is of note that both Hut 3 at Black Patch and Hut E at Itford Hill had several loom weights deposited on the floor.

Grain Analysis

The low number of weed seeds found in this unthreshed sample is indicative of a weeded crop. Of the 14 species identified, only three, *Brassica campestris, Stachis palustris and Gallium spureum* – are not found at Black Patch.

In this sample, only *Gallium aparine* suggests winter sowing. Given that 12 of the remaining species are spring indicators, it is reasonable to assume that, in this case, the barley crop was spring sown.

The large number of crossover species at Black Patch and Itford Hill inevitably means similar FIBS implications for husbandry methods. However, two of the newcomers from Itford Hill grow well in wet conditions. These are *Brassica campestris* and *Stachys palustris. Galium spureum* whilst fairly ubiquitous also prefers wet conditions. The first two are edible. The latter, whose common name is Marsh Woundwort, also has obvious medicinal uses, as its name suggests. Helbaek (1957) suggests that *Stachys palustris* (Marsh Woundwort) could be growing on clay patches which are quite common on the Downs and that it comprised about one quarter of the weed assemblage. False cleavers (*Gallium spureum*) are usually found in flax fields, which could have been a previous crop.

7.1.5 Patcham Fawcett B

The seed assemblage from Patcham Fawcett B was analysed by Hinton (1997). None prefer wet conditions. The seed assemblage from inside Roundhouse 1 mostly comes from a linear series of features running across the centre of the hut, terminating in a large pit located against the exterior wall on the right hand side of the hut. None of the features contained more than 12 identified or unidentified cereal grains. All the features had steeply sloping sides and flattish bottoms. Three contained a large number of fire-cracked flint and one a piece of sarsen quern, leading the excavator to suggest this was evidence of grain processing (Greatorex 1997, 4-5). It is hard to disagree with his interpretation.

Pit 51 was semi-circular, steep-sided with a flattish bottom. It contained two fills. The primary one, context 53, contained animal bone, foreign stone and fire-cracked flint. The fill, above context 52, contained animal bones, fire-cracked flint, a flint scraper and a whetstone. There is some confusion over the dating of this pit as the upper context (52) contained only Bronze Age pottery. Context 53 contained Middle Iron Age pottery. As this is the only Iron Age deposit on the site, later deposition is suggested (Greatorex 1997, 9).

This later disturbance is frustrating, as context 53 also contained a large number of carbonized seeds, although only a few grain seeds. The largest number of seeds in the assemblage belonged to *Stellaria media* (180), well known as food and for its medicinal qualities, as is *Trifolium cf pretense*, the next largest contributor (35 seeds). The latter, along with *Lithospermum arvense*, has a possible use as a contraceptive. Four other species can be used as food. This is the only context on the site that contains the normally ubiquitous *Galium aparine* and then only one seed. 46 seeds from various grass species are also found in this context. Ten of the 23 species found in this context do not occur elsewhere on the site and another seven are only also found in context 156.

Context 156 is an interesting deposition of a small pottery vessel placed in a feature that appears to have been dug to receive it. The pit in which the pot was found was 0.44m in diameter and 0.31m deep. As well as carbonised seeds, the pot contained two sarsens weighing 1.2kg, five fire-cracked flints weighing 215g, 100 fragments of charcoal mostly *Quercus* (oak) but also *Pomoideae* (Apple), *Fraxinus* (ash) and *Prunus sp.*(bird cherry), a fragment of burnt bone and two struck flints. There was no evidence that the vessel had contained cremated ashes.

The deposition contains mostly hulled barley (> 46%), indeterminate cereals (>16%), five spelt grains, 17 undifferentiated wheat seeds, ten oat grains, two fragments of field beans and small numbers of the following varieties of weeds: *Chenopodium album* (fat hen), *Chenopodium sp*. (goosefoot), *Stellaria media* (chickweed), *Polygonum convolvulus* (black bindweed), *Rumex sp*. (dock), *Vicia sp*. (taire) and *Trifolium sp*. (clover), together with four types of grass seeds.

Seven of the eight weed seeds appear in the crop depositions at both Itford Hill and Black Patch, leaving just the *Lithospermum arvensis* (corn gromwell) that is missing from the above depositions. Its name, however, suggests a weed from an arable field. All are native of chalk soils, all have medicinal properties and only the gromwell is not known to be nutritious.

Taken alone, it would be easy to interpret this deposition as just grain being processed using the stones to heat it in the pot. The occurrence of five different types of charcoal is intriguing but could just be the use of available resources. However, the inclusion of the grass seeds together with the clover suggests either the use of the vessel for other processes, or a deposition containing several different aspects of life, these being the processing of food, medicinal crops and grass crops, either for fodder or straw for handicraft purposes. The burnt bone and the flints would add credibility to this interpretation, which could represent an individual, or the whole group.

7.1.6 Mile Oak

The Mile Oak seed assemblage was analysed by Hinton (2002). The major part of the Mile Oak seed assemblage comes from the flotation of samples from three levels of Mound III in Trench K. However, there are a couple of interesting points to be made from some of the smaller deposits. The burial feature (2705) contained only one hazelnut fragment, apart from cereal grains. In other words, the assemblage is all food-based. Ditch fill 1421 contained broad beans as well as hulled barley.

All three contexts from Mound III contained a much greater variety of plant remains than have been found elsewhere in Sussex from the Bronze Age. Also, there is a large amount of grass fragments, including culm bases, indicating that the plants had been pulled up rather than reaped and were awaiting some form of processing for crafts or fodder (7.1.5 Patcham Fawcett).

The major component from these three contexts is *Ranunculus sp.* (buttercup), which is poisonous in large doses, as are *Rumex acetosa* (sorrel) and *Rumex crispa* (curled dock), which are also contained in the weed assemblage. Another five herbs having medicinal properties are also poisonous and come with a caution on dosage in modern herbals. These are *Ranunculus ficaria* (lesser celandine), *Linum usitatissimum* (purging flax), *Rumex sp*. (dock) and *Anagallis arvensis* (scarlet pimpernel). *Daucus carota* (wild carrot) is also thought to have hallucinogenic qualities (Buchanan 1979). None of these varieties, with the exception of dock, have appeared at other sites that have been investigated.

7.1.7 Ford

The majority of the carbonized seeds dated to the Late Bronze Age come from a series of intra-dug pits (111, 1136, 1243 and 1140) (Place 2004). The two most interesting contexts are layers 1141 and 1162. The former is directly above the latter. Context 1141 contained hulled barley as its main grain crop (28 grains). It also contained 186 fat hen seeds, a ratio of approximately 1:6 for grain to *Chenopodium album* (fat hen). Eight of the other varieties of weed seed are common in cereal assemblages from other sites and all of them prefer base soils. The newcomer, with eight seeds, is *Persicaria malucosa* an astringent to be taken with care. It is also used to make a yellow dye. After *Chenopodium album* (fat hen), it has the second highest number of weed seeds on the site. There are 98 weed seeds in seven different contexts. Eighty three of these seeds are found in the assemblage from context 1162. The main grain in this context is spelt. The presence of both glume bases and rachis fragments indicated that the grain had not been thoroughly cleaned at the time of charring. There is almost as much hulled barley as spelt but this has been thoroughly cleaned, as no chaff has been found. There are also about 400 fat hen seeds, giving a grain to fat hen ratio of 1:4. There are also 68 *Linum usitatissimum* (linseed) seeds. Linseed is not only used to produce oil but also in surgery. However, its seeds are poisonous if taken in quantity. Whilst most of the rest of the seeds found in context 1162 are found elsewhere, one, *Solanum dulcima* (sweet nightshade), is intriguing. Although only one seed of sweet nightshade was found, berries from the plant were used to make necklaces in ancient Egypt (one being found in Tutankhamen's tomb) (Phillips 1977, 48). It is also used for difficult medical disorders and its use should only be by experienced practitioners. It is found in mire-like conditions along with *Junkus effusus* (rush) also found at Ford.

7.1.8 Downsview

Downsview was analysed by Hinton (2002a). Unfortunatley the majority of the cereal grains were severely burned and in poor condition. However, the presence of *Hordeum vulgare* (barley) was indicated. Posthole 2818 on Building Terrace 2262 contained parts of 125 *Vicia faba l* (beans). Other than *Corylus avellana* (hazel) and Sambucus nigra (elder), other seeds may all occur as weeds of arable or disturbed land.

7.1.9 Discussion

Although the above information is generally sparse, until more sites are excavated, it is all there is of any note. The assemblage at Varley Halls (Hinton 1997, 48) was in too poor a state of preservation to add to the above analysis. Therefore, all conclusions and inferences will eventually stand or fall on the analysis of further data and should be treated with caution. The crop assemblages at both Black Patch and Itford Hill are unique in the fact that they appear to be the result of one parching incident. The grain in both cases was well cleaned, much more so than modern ethnological counterparts. The status of the grain was at a stage where parching was not imminent, which would leave a major fire as the most likely cause of burning. However the remains show no signs of charcoal. All three depositions have been put on the bottom of the pit, with one at Itford Hill in a conical form. As far as can be ascertained, there is no functional use for burnt grain.

Therefore, it would appear that the burning is not an accident. The careful positioning at the bottom of a pit would indicate some form of structured deposition, that is, one which is deliberately placed and constructed for a non functional purpose, possibly as an abandonment deposit. There might be a relationship between the grain deposits and the ox jaw which was deposited in Hut Platform 3. Certainly the deposition at Patcham Fawcett shows the ceremonial importance of grain, where it is possible that we are looking at an alternative to cremation as a way of remembering the dead. The amount of charred grain buried in pits or ditches on all the sites studied would seem to indicate that burying plant refuse was important. Most seeds found in postholes seem to come from the front or centre of huts which would indicate that these areas were used to process grain.

The cleaned condition of the grain, together with the associated weeds, indicates a weeded crop that was probably fertilised and grown in some form of rotation suggested by the occurrence of legumes (beans) at Black Patch, Mile Oak, Patcham Fawcett B and Downsview. The weeding would also enable the collection of useful plants growing in the crop, not only medicinal but also fodder, thus achieving two ends simultaneously. Leaves of *Brassica nigra* (black mustard), *Chenopodium album* (fat hen), *Stellaria media* (chickweed), *Viola sp*. (viola), *Atriplex patula* (orache) and *Medicago lupulina* (black meddick) are all produced before either wheat or barley crops are ready for harvesting.

The fact that most weed seeds are found towards the front of huts would seem to indicate that both crop and fodder was prepared at the front of the house. However there is no need to burn fodder and these seeds are all carbonized. It is probable that they were swept onto the fire for cleaning purposes and were dropped when ashes were taken from the hut. Those found on Mound K at Mile Oak were found in layers. Seeds, particularly those of grass, have been found in Bronze Age barrows possibly indicative of turf being used in the funeral pyre. The inclusion of grass seeds in the pottery vessel found at Patcham Fawcett B may have a funerary connotation.

Both Mile Oak and Ford assemblages show an increase in the range of seeds found, both medicinal and non-medicinal varieties, some of which require skilled and informed use. More of the plant types are from differing habitats; wet (three types of *Brassica* and *Ranunculus ficaria*), mire (*Solanum dulcima* and *Junkus effusus*) and woodland (*Veronica hederifolia*). The carbonization of weed seeds not from cereal (food production) or meadow (fodder) habitats implies deliberate collation for other uses.

Given that these have strong medicinal qualities, it is reasonable to suggest more than just a basic level of knowledge of herbal medicine. It is arguable that earlier sites did not use herbs as medicines. It would seem inconceivable that as they are using wild plants for both fodder and food, they were not aware of their medicinal qualities even if they came in as part of the harvest or fodder collection. These sites also have an increase in plants used for dyeing and have indications of the preparation of various grasses possibly for hand crafts.

It is interesting to note that both sites show evidence of metalworking.

7.1.10 Conclusion

The care with which the grain was produced probably implies that end-users other than those living on the site were identified before sowing took place. These were either as tribute to those controlling land use and/or trade or exchange. Movement of the grain was presumably by basket and possibly boat along the river. It shows not only a well organized work force but also a stable political situation. The number of structured depositions and the case of the ceramic jar at Patcham Fawcett B with its possible allusion to past practices, would also indicate a stable yet evolving religious structure.

The increase in the use of plants from different habitats along with the increase in knowledge of how to administer them implies evolving ideas. It is possible that, since these plants require more knowledge to administer properly and would require extra knowledge over and above the household level, medical specialisation may have been available at later sites.

7.2 Bones

7.2.1 Introduction

Bone assemblages are studied primarily for age, sex and processing marks to help understand animal husbandry and usage. However there are three main problems with bones found on archaeological sites. The first relates to primary depositional/discarding processes. The second is post-depositional movement, particularly by canines. The third is the state of preservation or lack of it in the archaeological record. This makes it very difficult to determine much information from a Bronze Age site unless the context in which it is found is secure and the state of preservation enables scientific analysis. Otherwise, the only useful information is on type, age at death and butchering practices.

With these constraints in mind, the bone assemblages from both Black Patch excavations will be examined and then compared to other sites.

7.2.2 Black Patch Bone Assemblages

The bones from the 1977-79 assemblage showed both cattle and sheep had a variety of death or slaughter ages, ranging from new born, through immature, to mature for cattle and immature through to mature for sheep. The numbers in each category, although small, showed an equal distribution across both species and age (Table 7.2) (O'Connor 1982). Bones from game animals were also found, thus indicating that hunting was still part of the lifestyle (Drewett 1982, 341).

The assemblage of bones from the 2005-6 excavation, examined by the author, was both poorly preserved and low in numbers of identifiable species other than large ungulate. Of note were the two depositions of part (possibly the whole) of a cattle skull and radius of the same species.

More productive was the teeth assemblage analysed by Green (2008) (Vol. 2. Appendix). She was able to suggest that the *Bos sp.* (ox) whose skull was found was between eight and 18 months and that the *Ovicaprid* (sheep) were between one and two years, suggesting an autumn killing at 20 months (Green 2008).

Both the assemblages at Black Patch are too small to be definitive. Both show indications of slaughter for food of both *Bos sp*. (cattle) and *Ovicaprid* (sheep) and there is evidence of dairy (Copley *et al.* 2005) and wool production in Hut 2 Hut Platform 4.

7.2.3 Analysis of other sites

The easiest way to analyse the bone assemblages for all the sites is first to categorise sites by the ages of death of the two major species - *Bos sp*. (cattle) and *Ovicaprid* (sheep) - and then to look at other bones found on site (Table 7.2).

The first group are those where each species has an age range of at least immature and mature. For *Bos sp*. (cattle) that comprises Amberly Mount, Black Patch HP4, Itford Hill and Varley Halls and for *Ovicaprid* (sheep) it would comprise the same group with the addition of Shinewater. Both Varley Halls and Amberly Mount have indications of on site butchery.

Table 7.2 Bones found on domestic sites

Site	Species	Number and Age	Notes	Deposition
Amberley Mount (Ratcliffe-Densham H.B.A. and M.M. 1966)	*Ovicaprid* (Sheep) *Bos sp.* (Cattle) *Equus sp.* (Horse/pony) *Sus sp.* (Pig) *Canis sp.* (Dog) *Cervus elaphus* (Red Deer) Bird	4 mature 23 immature 8 at least 2 immature 1 old, 2 others .	Butchered	Most of skeleton of an old pony buried behind Hut II
Black Patch 77/79 (O'Connor 1982)	*Ovicaprid* (Sheep) *Bos sp.* (Cattle) *Sus sp.* (Pig) *Cervus elaphus* (Red Deer), Bird	2 immature 2 mature 2 newborn 2 immature 3 mature 1 newborn/1 adult		
Black Patch 2005-06 (Green 2009, Tapper unpublished)	*Ovicaprid* (Sheep) *Bos sp.* (Cattle)	2 immature 1 immature		Hut A Cattle skull Right front central post ring Cattle radius inserted vertically between 3 post-holes entrance right
Cock Hill (Ratcliffe-Densham H.B.A. and M.M. 196I)	*Ovicaprid* (Sheep) *Bos sp.* (Cattle) *Equus sp.* (Horse) *Canis sp.* (Dog) *Cervus elaphus* (Red Deer)	5 unspecified 5 unspecified 1 unspecified	Mostly found unstratified in ditch	Skull of *Bos sp.* found unstratified in ditch
Downsview (Stevens 2002a)	*Ovicaprid* (Sheep) *Bos sp.* (Cattle) *Sus sp.* (Pig) *Equus sp.* (Horse) *Canis sp.* (Dog). *Lepus sp.* (Hare) *Gallus sp.* (Fowl) *Anser sp.* (Goose).	Mostly 3 years a few older None less than 3 years old	3% gnawed 12% gnawed	Most bones unstratified
Itford Hill. (Jackson 1957)	*Ovicaprid* (Sheep) *Bos sp.* (Cattle) *Sus sp.* (Pig) (Greis 2002, 35) *Equus sp.* (Horse)(Greis 2002, 35)	Yes Yes Predominance of cattle. Inference of text suggests majority mature but also a few young animals		Ox skeleton Centrally placed at the back of Hut N Ox tooth immature found with human bones Hut C pit 21
Mile Oak (Stevens 2002b)	*Ovicaprid* (Sheep) *Bos sp.* (Cattle) *Sus sp.* (Pig) *Equus sp.* (Horse) *Cervus elaphus* (Red Deer) *Lepus sp.* (Hare)	11 6-8 months Not less than 18 months		

Site	Species	Number and Age	Notes	Deposition
Park Brow (Wolsey *et al.* 1927)	*Ovicaprid* (Sheep) *Bos sp.* (Ox-cattle) *Sus sp.* (Pig) *Cervus sp.* (Deer) *Sus scrofa* (Wild Boar)			
Patcham Fawcett A (Wood 1994)	*Ovicaprid* (Sheep) *Bos sp.* (Cattle) *Canis sp.* (Dog)	Mature Mature		
Patcham Fawcett B (Sevens 1997)	*Ovicaprid* (Sheep) *Bos sp.* (Cattle) *Sus sp.* (Pig) *Equus sp.* (Horse) *Canis sp.* (Dog)	Adult 3 ½ years + 6 months 7 years		
Shinewater (Stevens 1995)	*Ovicaprid* (Sheep) *Bos sp.* (Cattle) *Sus sp.* (Pig) *Equus sp.* (Horse) *Canis sp.* (Dog) *Cervus elaphus* (Red Deer) *Capreolus capreolus* (Roe Deer), *Anas sp.* (Duck) *Guriade sp.* (Crane) *Buteo sp.* (Buzzard), *Corvus corax* (Raven) *Corvus sp.* (Crow)	Range between 6m and 3 ½ years At least one over 3 years		Most long bones had been split for marrow. Lots of gnawing by dogs
West Blatchington (Brazenor 1950)	*Bos sp.* (Ox.-cattle)			

The second group consists of those that contain only immature animals. For *Bos sp.* (cattle) they comprise Black Patch 2005-06, Itford Hill and Patcham Fawcett B and for *Ovicaprid* (sheep), Black Patch 2005-06 and Mile Oak.

The third and last group contains sites with mature animals only. For *Bos sp.* (cattle), these are Downsview, Mile Oak, Patcham Fawcett A and Shinewater and for *Ovicaprid* (sheep), Downsview, Patcham Fawcett A and B.

The numbers of bones are relatively small but it is possible to perceive some patterns.

Firstly, those sites with different age groups are the same for *Bos sp.* (cattle) and *Ovicaprid* (sheep), with the addition of Shinewater for *Ovicaprid* (sheep). Secondly, only two sites have exclusively mature cattle and sheep - Downsview and Patcham Fawcett A. Thirdly, three sites have exclusively mature animals of one species and immature of the other. Those with mature *Bos sp.* (cattle) and immature *Ovicaprid* (sheep) are Mile Oak and Shinewater and mature *Ovicaprid* (sheep) and immature *Bos sp.* (cattle) Patcham Fawcett B.

It is clear that some form of diversification is taking place. Exclusively adult animals usually point to specialisation in secondary products, like dairy and wool. It is of note that this appears to be happening in the area of Downsview, Patcham Fawcett A and B and Varley Halls, with the later partaking in primary as well as secondary animal products.

The fact that all of these sites have been recently excavated strengthens the evidence used in this argument.

Shinewater, a Late Bronze Age site, also shows signs of specialization, with only adult *Bos sp.* (cattle) and *Ovicaprid* (sheep) of varying age. However, as most of the long bones found on the site had been split to extract marrow, it is possible that the specialization here was feasting and ritual, given the large number of high status objects found on the site.

At Black Patch, on the basis of evidence of dairying and wool production, it looks as if this site was self-contained as far as animal husbandry was concerned, being both a producer and manufacturer of primary and secondary products. The lack of mature bones in the later excavation is either the result of poor preservation or a specialization in primary products production. The latter might explain the structured animal deposits and possibly indicating interaction with Hut Platform 4.

Sus sp. (Pig)

Pig bones are ubiquitous occurring on all but three sites, those being Cock Hill, Patcham Fawcett A and West Blatchington.

Equus sp. (Horse)

Horse bones are also fairly ubiquitous, occurring on all but five sites, those being Black Patch, Park Brow, Patcham Fawcett A, Varley Halls and West Blatchington.

Canis sp. (Dog)

Present at six sites.

Game/wild animal

Present at all sites except Itford Hill, the Patcham Fawcetts, Varley Halls and West Blatchington.

7.2.4 Depositions

There are seven instances of animal burials in unusual situations and all but one featuring *Bos sp.* (cattle). There are two with articulated skeletons at Itford Hill and Varley Halls, two involving skulls at Black Patch and Cock Hill, one involving a tooth associated with human bones - at Itford Hill and one involving a radius - at Black Patch. The only other one is *Equus sp*. (horse) at Amberley Mount.

7.2.5 Discussion

There appears to be specialisation in the production of *Bos sp.* (cattle) and *Ovicaprid* (sheep) products although all sites have both types of bone though from different age groupings. This would seem most apparent in the Downsview region.

The keeping of *Sus sp.* (pigs) is widespread; all but three sites have evidence of pigs. *Sus Sp.* (pigs) are omnivorous, eating household refuse and are also good at clearing ground by grubbing up remnants of the previous crops.

The number of sites with evidence of dogs is the same as for horses, six out of 11. The *Canis sp.* (dog) is believed to have been domesticated earlier than the horse and is widely believed to have been common in the Bronze Age (Parker Pearson 1993, 86). The domesticated *Equus sp.* (horse) is usually believed to have been introduced to this area during the Beaker Period (Parker Pearson 1993, 27; Harding 2000, 134) but the fact that six sites have evidence of horses shows them to be quite widespread in the Middle Bronze Age. It is possible they were imported, ready broken as exotic items for exchange as there is no evidence for breeding or breaking in the Bronze Age in Southern Britain (Cunliffe 2008, 58-9). The hunting of game also appears to still be prevalent.

7.2.6 Conclusion

The faunal evidence shows interaction of sites and probable agreement of site specialization. This would still be the case even if the sites were not contemporaneous as they would all then have been producers of primary and secondary meat products, unless there is poor preservation of bones. The number of sites surveyed is probably large enough to at least make suggestions. The use of *Sus sp*. (pigs) shows some sophistication in the use of assets for agricultural techniques. The implication for the occurrence of *Equus sp*. (horse) bones is not only of a more mobile elite (Harding 2000, 135-6) but also the possible occurrence of another trade item.

7.3 Marine Molluscs

Surprisingly, as can be seen from Table 7.3, only nine out of the sites examined had

Table 7.3 Occurrence of Marine Molluscs on Sussex M.B.A. Settlement Sites

Amberley Mount (Ratcliffe-Densham H.B.A. and M.M. 1966)	*Mytilus edelis* (Mussels) *Patella vulgata* (Limpets) *Cardeum edule* (Cockles)
Black Patch 2005-06 (Tapper forthcoming)	*Mytilus edelis* (Mussels) *Patella vulgata* (Limpets) *Ostria edulis* (Oysters)
Black Patch 1977-79 (Drewet 1982)	*Mytilus edelis* (Mussels) *Littorina sp.* (Periwinkles) *Cardeum edule* (Cockles) *Patella vulgata* (Limpets) *Ostria edulis* (Oysters)
Cock Hill (Ratcliffe-Densham H.B.A. and M.M. 1971)	*Mytilus edelis* (Mussels) *Cardeum edule* (Cockles)
Downsview (Hasler and Rudling 2002)	*Chlamys sp.* (Scallops) *Littorina sp.* (Periwinkles) *Ostria edulis* (Oysters) *Baccinum sp.* (Whelks) *Mytilus edelis* (Mussels) *Patella vulgata* (Limpets) *Cardeum edule* (Cockles)
Itford Hill (Burstow and Holleyman 1956)	*Littorina sp.* (Winkles)
Mile Oak (Hasler 2002)	*Mytilus edelis* (Mussels) *Cardeum edule* (Cockles) *Ostria edulis* (Oysters) *Venerupis pullastra* (Carpet Shells) *Chlamys sp.* (Scallops) *Littorina sp.* (Periwinkles) *Baccinum sp.* (Whelks)
Park Brow (Woseley 1927)	*Mytilus edelis* (Mussels)
Varley Halls (Wilkinson 1997)	*Mytilus edelis* (Mussels) *Ostria edulis* (Oysters) *Patella vulgata* (Limpets)

marine shells. There is no particular distribution pattern and whether this is due to excavation strategies or usage is unclear. Molluscs found were *Mytilus edelis* (mussel), *Patella vulgata* (limpet), *Cardeum edule* (cockle), Ostria edulis (oyster), *Chlamys sp.* (scallop), *Venerupis pullastra* (carpet shell), *Baccinum sp.* (whelk) and *Littorina sp.* (periwinkle).

As these sites are spread across Sussex and since there are poor preservation conditions for shell on the coastal plain, it is probable that marine molluscs were eaten on most sites. This certainly indicates movement and possibly exchange between the coastal plain and the Downs, at the time of these settlements.

At Mile Oak where comparison is possible, *Mytilus edelis* (mussels) are favoured in the Middle Bronze Age but are replaced by *Ostria edulis* (oysters) in the Late Bronze Age as can be seen from Table 7.4 taken from Rudling (2002). Although the sample is small, this pattern is somewhat mirrored at Park Brow where *Ostria edulis* (oysters) are found only in the Romano-British horizon of a ditch, whereas *Mytilus edelis* (mussels) are only found in the lower Bronze Age horizons (Wolseley *et al.*1927, 27).

Table 7.4 Marine Molluscs from M.B.A. and L.B.A contexts at Mile Oak. (Rudling 2002a, table 2.31 p.65)

Species (Hasler 2002)	**Trench 27 M.B.A.**	**Trench K L.B.A**
Mytilus edelis (Mussels)	6512	1
Cardeum edule (Cockles)	52	27
Ostria edulis (Oysters)	6	50
Venerupis pullastra (Carpet Shells)	41	29
Chlamys sp. (Scallops)	2	4
Littorina sp. (Periwinkels)	28	0
Baccinum sp. (Whelks)	0	4

Chapter 8. The Black Patch Landscape

8.1 Introduction

To further knowledge and to help answer the research questions, a landscape study was undertaken. The problem for all such studies is deciding the extent of the study. The three main considerations that have to be involved are relevance, time allotted and

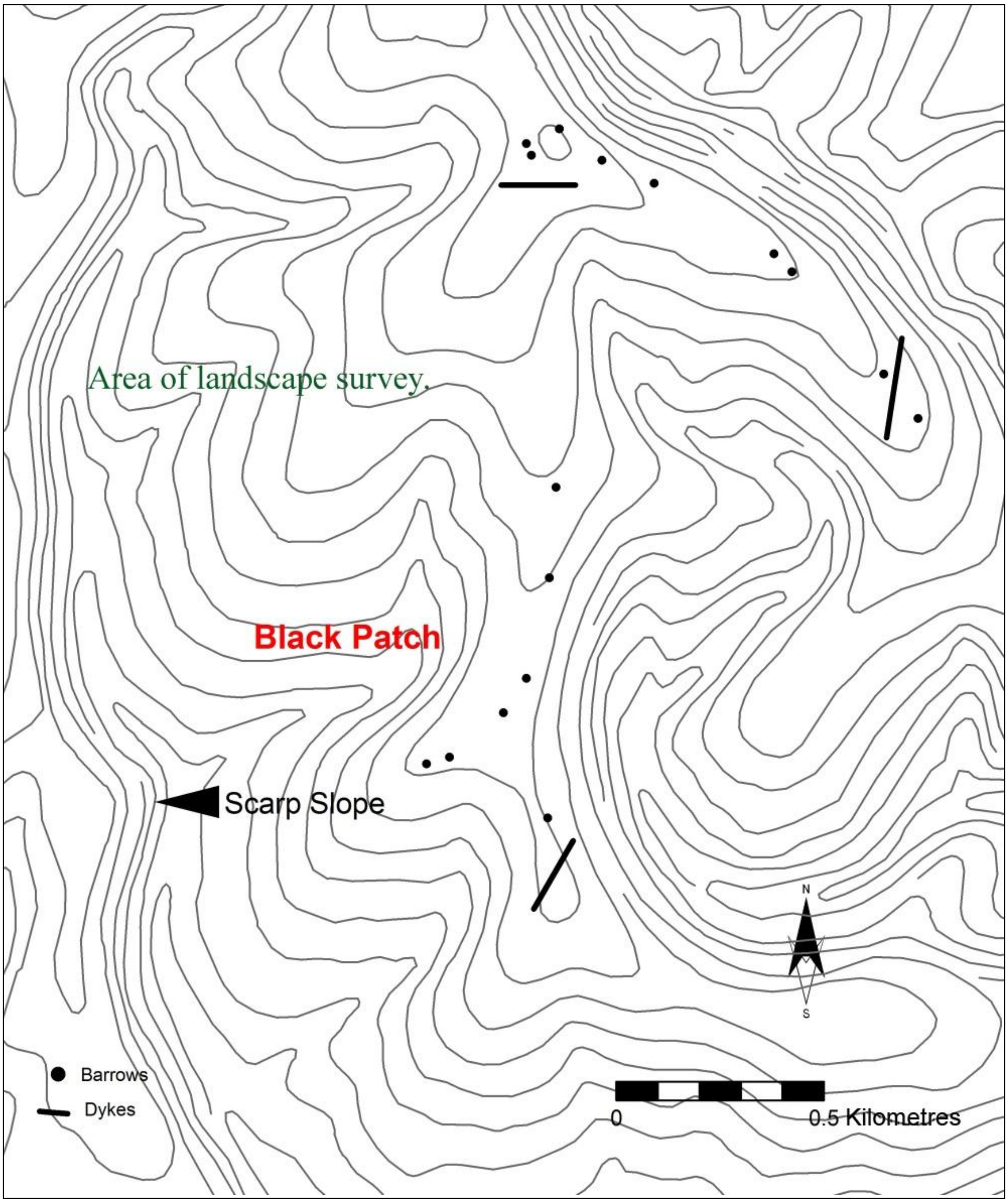


Fig. 8.1 Area of landscape survey showing dykes and barrows

manpower resources. It was decided to restrict the study to the valley which contains the spur of land on which the settlement sites are located from the bottom of the spur to the position of the highest enclosure. This valley is surrounded by barrows that are intervisible with the settlement and appears to contain the field system surrounding the settlement sites. This area (Figure 8.1), bounded by the barrows, seemed to be able to show the immediate landscape around the settlement as a coherent whole enabling advancement of knowledge within an achievable time, given the resources available.

Five different landscape methods were undertaken to enable a better understanding of landscape use in the past. These were an auger and test pitting survey; a micromorphological and chemical analysis; a field walking survey; a land survey and a phenomenological study. These investigations were analysed and their conclusions added to information from the archaeological excavations from the area under study. The resulting corpus of information was used to establish the phasing of human agency in the area. Each phase was subjected to a calorific input/output analysis where possible. This study will look at yields, labour requirements, calorific requirements and agricultural land-usage. This section will close with the conclusions reached from above studies followed by a review of the phenomenological study.

8.2 Auger and test pitting survey

This analysis was undertaken by Stewart as part of an M.A at Reading University (Stewart 2002).

Geology of the area

The geology of the South Downs (Figure 8.2) consists of a chalk escarpment rising about 200m above OD. The main geological component is the Cretaceous Middle and Upper Chalk, with some Lower Chalk.

There are also areas of clay-with-flints. These are exactly as they are described deposits of clay containing flints. There are also Coombe deposits which are gravel accumulations of chalk fragments and flints.

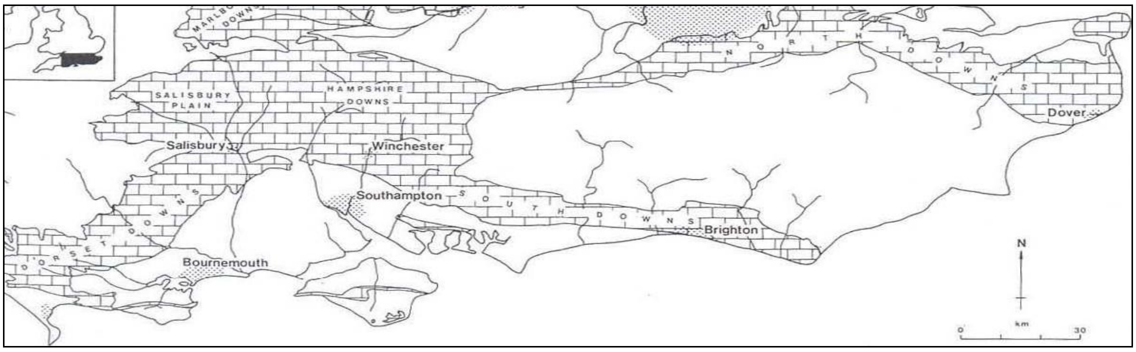


Fig. 8.2 Distribution of Chalk Downland in Southern Britain. (Watton 1984, Figure 18.1)

Figure 8.3 shows the area to the north of Black Patch which is situated in the red square. A line of Coombe deposit runs along the floor of Greenway Bottom, the valley just to the east of the site. There are also many areas of clay-with-flint (marked in dark brown) close to the site.

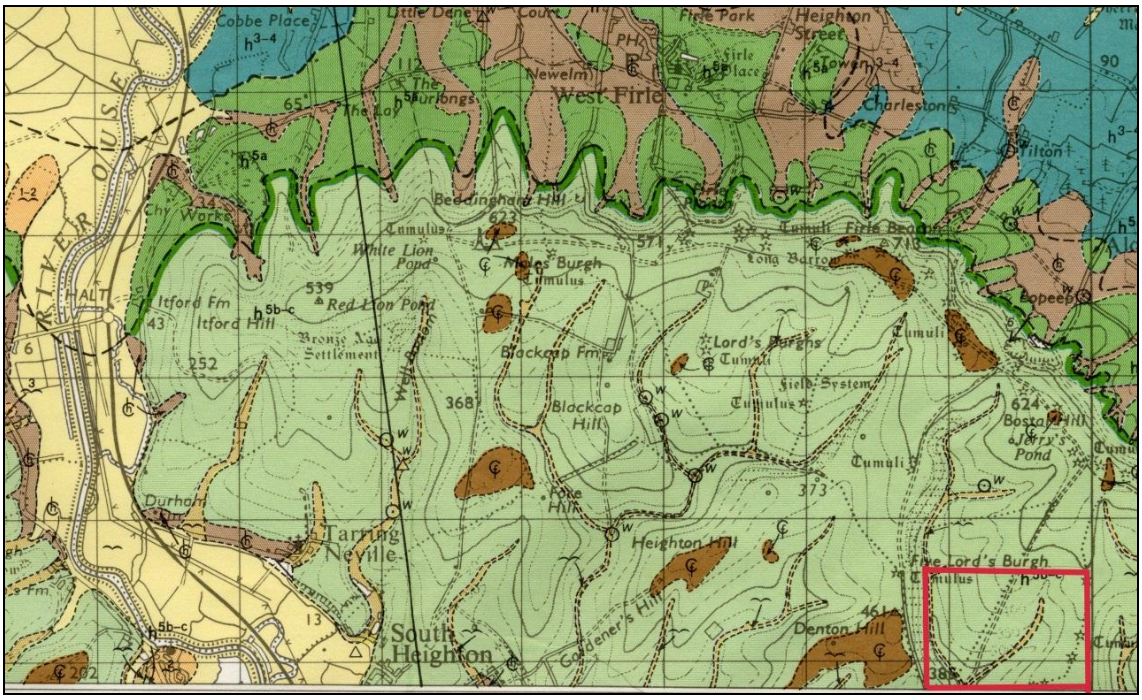


Fig. 8.3 Geological map of the area of the South Downs British Geological Survey. Lewes. England and Wales Sheet 319.Scale 1:50000. Black Patch is in the red square. Key: Pale Green = Upper and Middle Chalk; Dark Brown = Clay-with-flints; Light Brown = Head

Soils

The Sussex Downs are covered by Brown Rendzina soils caused by the pedogenetic mixing of the parent material (chalk) with the clay-with-flints deposits and the original topsoil (Figure 8.4). The depth of the overburden covering part of the 2005-6 excavation was only 200mm in places. These soils can be of varying quality due to the large amounts of flint and chalk.

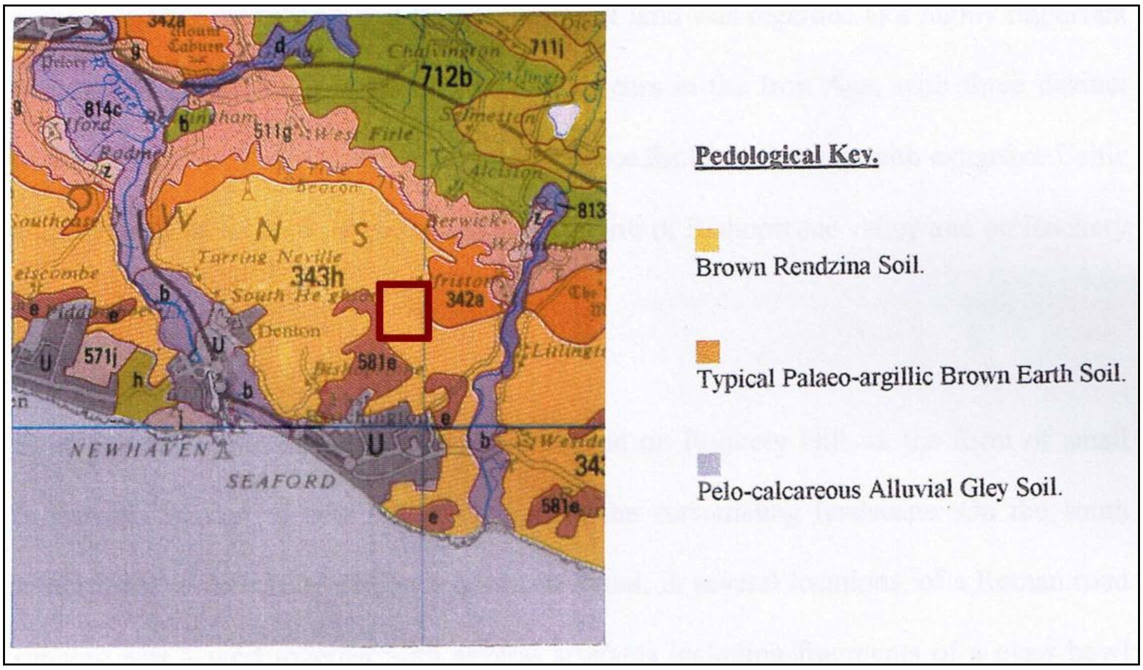


Fig. 8.4 Large scale soil map of Black Patch (in red square) and surrounding area. O.S.S. 1:25,000, Sheet Six, S.E. England, (Piers 2005)

Topography

The topography of the Black Patch dry valley is asymmetrical, with its eastern slope being generally steeper than its western counterpart. The valley widens and shrinks at various points, possibly causing bottle-necks in colluvial flow.

Auger Survey

The purpose of the auger survey was to see if there was any change in the various levels of colluvium in the valley to note any dateable, particularly Bronze Age, finds in the different colluviums and to identify the best location for the test pits for the valley bottom survey. This survey would, by identifying dateable Bronze Age finds in the different types of colluvium, show the timing and extent of colluviation during the Bronze Age.

Auger holes were dug using a Jarrett-style auger with an aperture of 90mm every 100m along the valley bottom to the south east of the settlement sites called Greenway Bottom. Occasionally, a 50m interval was used where the topography changed. Three holes were augered at each location, one in the valley bottom and one at a distance of 10m up both the slopes. Soil samples were taken every 200mm in depth, or where soil type changed. All finds were noted as to depth (Figure 8.5).

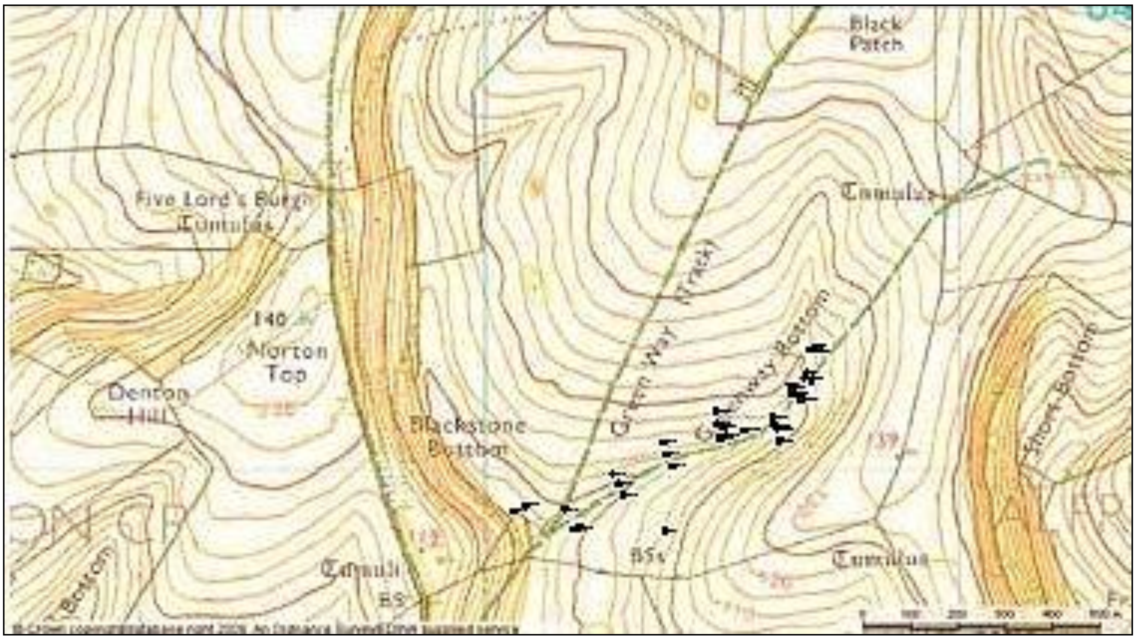


Fig. 8.5 Locational map of auger holes

Finds

A small number of finds were located during augering. Five struck flints and two sherds of pottery were dated to the Later Bronze Age. There was no patterning as to the depth of finds or sediment in which they occurred.

8.3 Valley Bottom Survey Test Pits

A series of three test pits were excavated across the valley bottom on the basis of the evidence of the auger survey which had identified this area to contain the greatest depth of colluviation. The test pits were located above augur holes 104, 105 and 106 (NGR TQ49444 030044). Figure 8.6 shows the location of the test pits which are marked in blue on the valley bottom. The test pits were labelled consecutively 1-06 to 3-06 from east to west. The test pits on either side of the valley were two metres square and the middle test pit, number 2-06 measured four metres by four metres. The test pit in the middle was enlarged to four metres when a water pipe running along the bottom of the valley was discovered in the middle of it. The pits were excavated by hand and each find plotted by level and marked on the section drawings. Micromorphological and bulk soil samples were taken.

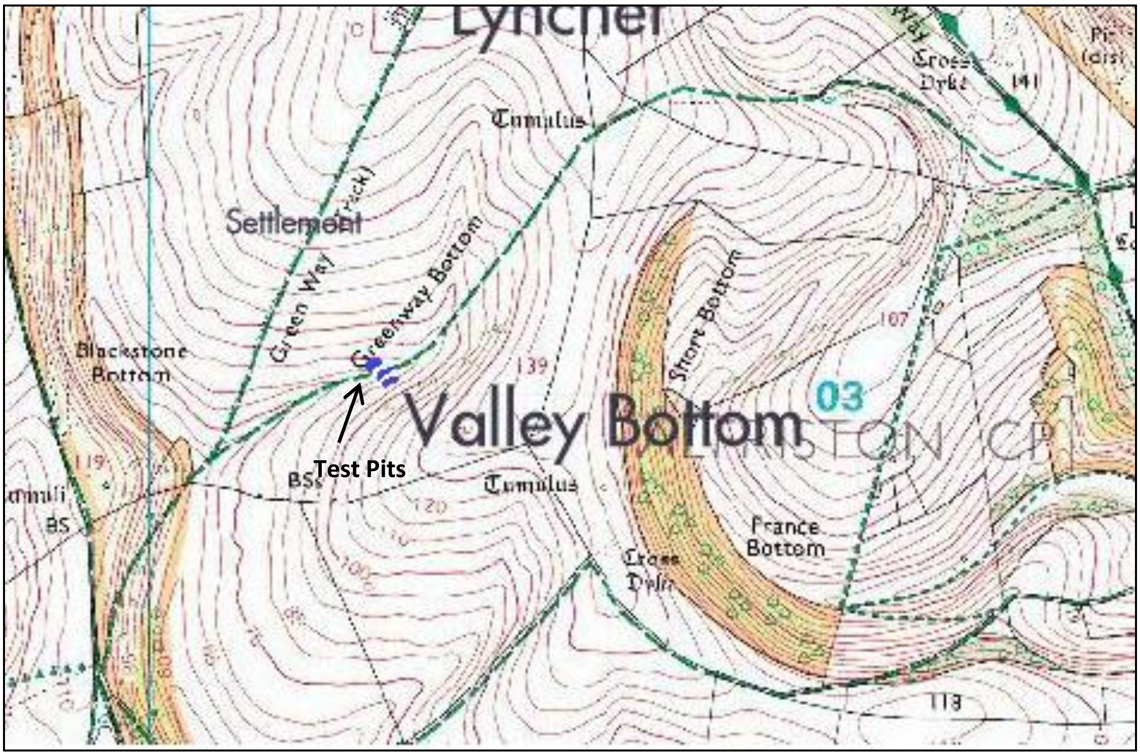


Fig. 8.6 Location of test pits marked in dark blue on valley floor. O.S. map 2005 sheet 198 1:50000

The sediments in the test pits exhibited distinct morphological differences between the layers. Directly above the chalk bedrock there were periglacial clay deposits. Above these were the remnants of an argylic brown earth soil, possible Bronze Age colluvium, above which was a level of what may be post 1945 colluvium and above this were a B and then an A top soil horizon.

This can be seen in Figure 8.7, which shows the east and west facing sections of pit 2-06. The red numbers on the section drawings indicate finds, green numbers, soil samples. There is also a photograph (Figure 8.8) of the east facing profile. The majority of the finds occur in the possible Bronze Age colluvium. The water pipe can be seen on the right hand side of the photograph. The layers of large flints across the sections represent flooding incidents.

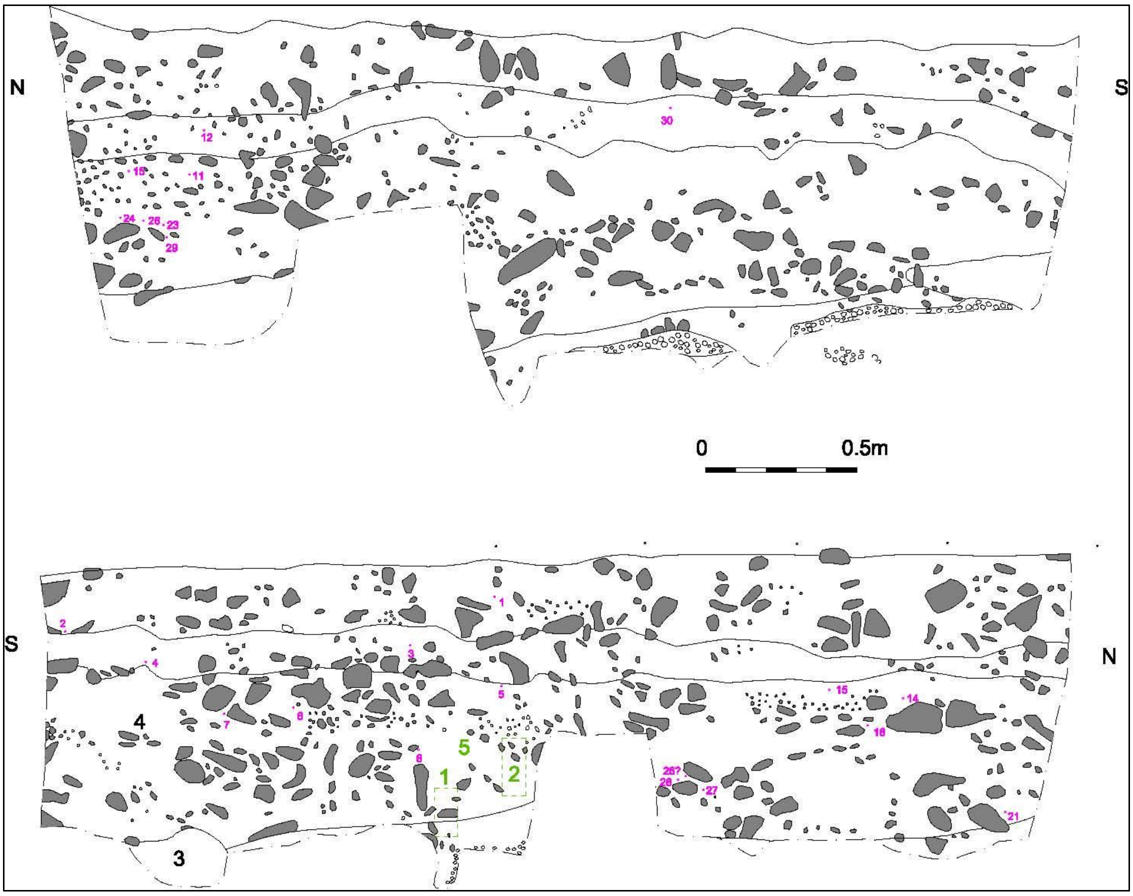


Fig. 8.7 Sections of the west and east facing profiles of test pit 2-06. Scale 0.5m

Fig. 8.8 Photograph of east facing profile of test pit 2-06. Scale 2m Photo. ©Lisa Fisher

Finds.

The finds from the three test pits were predictably much more prolific than from the augering. The vast majority of finds dateable to the Later Bronze Age were in the lower level of colluvium. This would indicate a Later Bronze Age origin for the sediment. A Mesolithic blade was found in the periglacial level at the bottom of pit 3-06 and several Neolithic flints were found in the modern day colluvium obviously coming from uphill.

8.4 Further Test Pits

Three further test pits 1-08, 2-08 and 3-08 were excavated in the southern end of Blackstone Bottom (the western valley) at TQ 4902702983, TQ 4887603252 and TQ 4888003439 when the field system was shown to extend into that area by the land survey. As can be seen from the photograph of pit 3-08 (Figure 8.9), the colluvium has a lot less flint in it. The colluvium layer is from the bottom of the scale to the top of the red part of the scale and is coloured mid-brown.

Fig. 8.9 Test pit 3-08. Scale 1m

This pit was the most northerly and, the colluvium became more complicated in a southerly direction, as can be seen from Figures 8.10, 8.11 and 8.12 which are north-north-west facing section drawings of pits 1-08, 2-08 and 3-08 with context numbers.

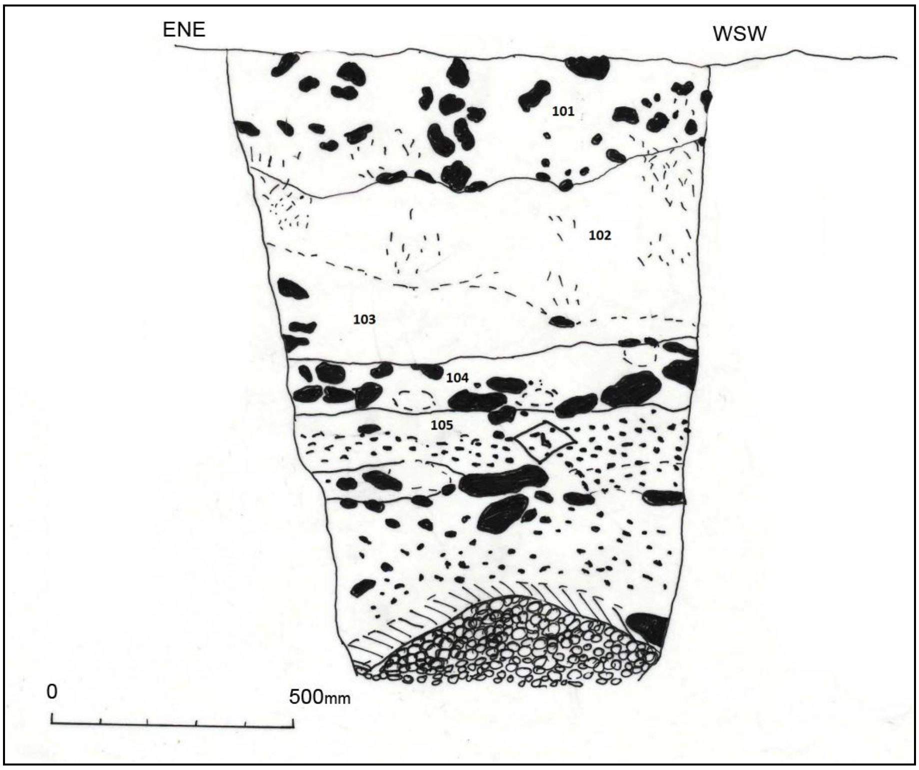


Fig. 8.10 Test pit 1-08. Scale 500mm

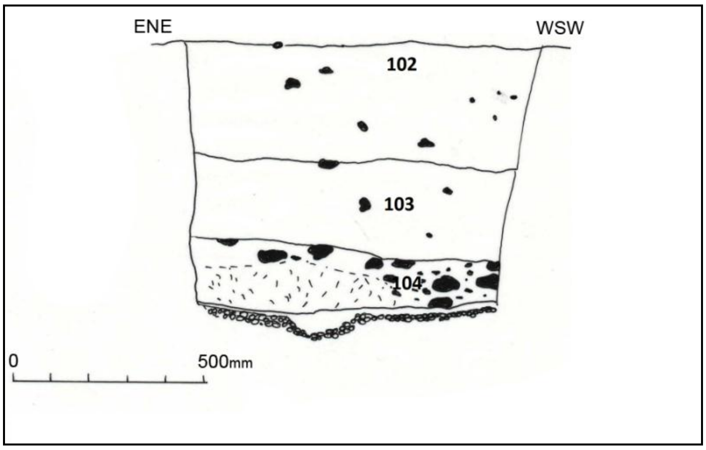


Fig. 8.11 Test pit 2-08. Scale 500mm

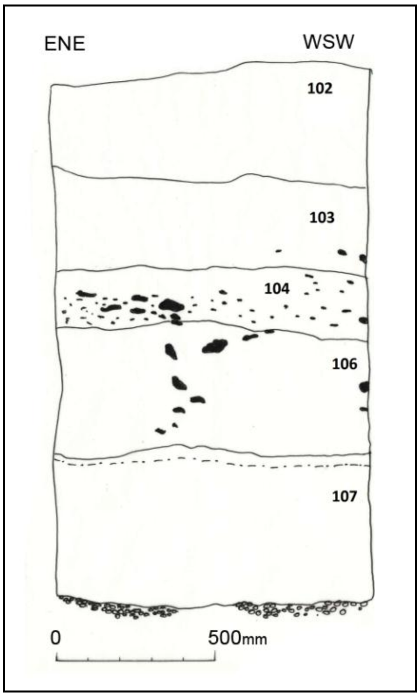


Fig. 8.12 Test pit 3-08. Scale 500mm

Test pit 1-08 has a hiatus between the depths of 250mm and 700mm between two colluvial layers 101 and 104 containing many large flints. The soil types found in this hiatus are context 102: Dark Brown Earth and 103: Brick Earth. All of the flint artefacts found in this pit, except for four located in the topsoil, were located below this hiatus. A total of 19 hard hammer flakes and also assorted fragments were distributed from below the hiatus to the bottom of the pit. Context 105 is also colluvial.

The top two layers of test pit 2-08 are 102 and 103. They are also lacking in flints. Only two artefacts were found in this pit - both hard hammer flakes and both below the top two layers in 104. These two layers occur also in test pit 3-08. In this test pit, three hard hammer flakes are found in these layers. Four hard hammer and two soft hammer flakes were found in the lower layers of this pit as well as a side scraper. The bottom two layers in test pit 3-08 are soil types 106: Brick Earth and 107: Loess.

8.5 Conclusion

As can be seen, the sediment profiles of the test pits 1-06, 2-06 and 3-06 from the eastern valley (Greenway Bottom) and the first test pit 1-08 located in the western valley (Blackstone Bottom) are similar.

This is not surprising, as they would all be subject to colluvium from the same source, the top of the ridge, apart from a period in the recent past when ploughing was restricted to more easterly parts of the ridge. The hiatus may well have been caused by soil creep during a long period of fallow or non agricultural use.

The sediments from the other two test pits in the eastern valley are much more homogenous and are formed of colluvium and possibly some of the original post-glacial soils from the western facing slope. The top two levels of both pits have been subjected to the same process, possibly soil creep, as test pit 1-08. There is then a layer of colluvium containing flints. At this level, test pit 2-08 hits bedrock, other than relict soil found only in a tree throw at the bottom of the pit.

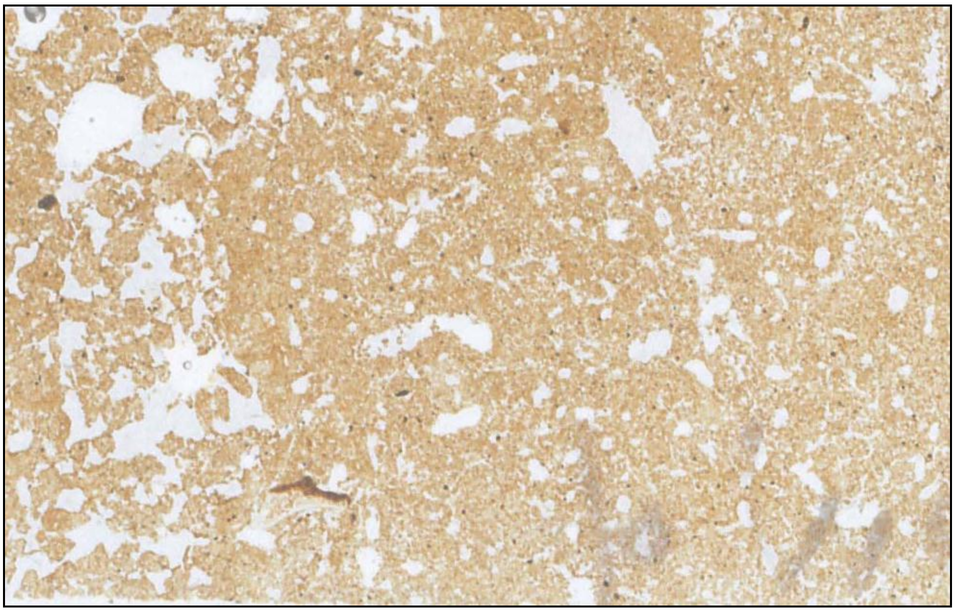
Test pit 3-08 was much deeper and had homogenous lower levels of soil type 107, the original post glacial soil indicating that whilst the original soil from the eastern valley was completely eroded by pre-historic agriculture, the soil in the western valley was not. This makes it less likely that soil erosion was the cause of abandonment.

8.6 Micromorphology and Soil Sampling results

A number of micromorphological samples were taken from both valleys in order to look at and compare soil structural formation processes in the two valleys.

Figure 8.13 shows the difference in the two colluvial soils on each side of the valley.

The difference in the two sediments is evident. The western valley is much more homogenized and shows fewer cracks. It is also less compacted. This is because the colluvium in the eastern valley has been subjected to more high energy events during periods of minimal ground cover, mixing the sediments and moving them further down the valley side and along the valley bottom.



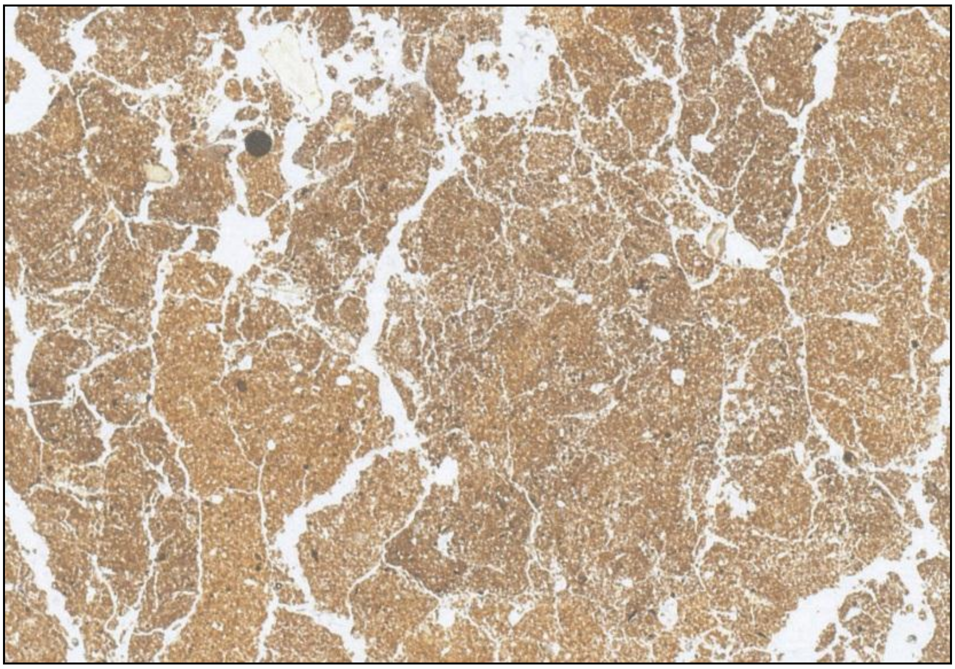


Fig. 8.13 Thin sections of the two colluvial sediments. Top: test pit 1-08 in the western valley. Bottom: test pit 2-06 in the eastern valley. Both 100x magnification PPL

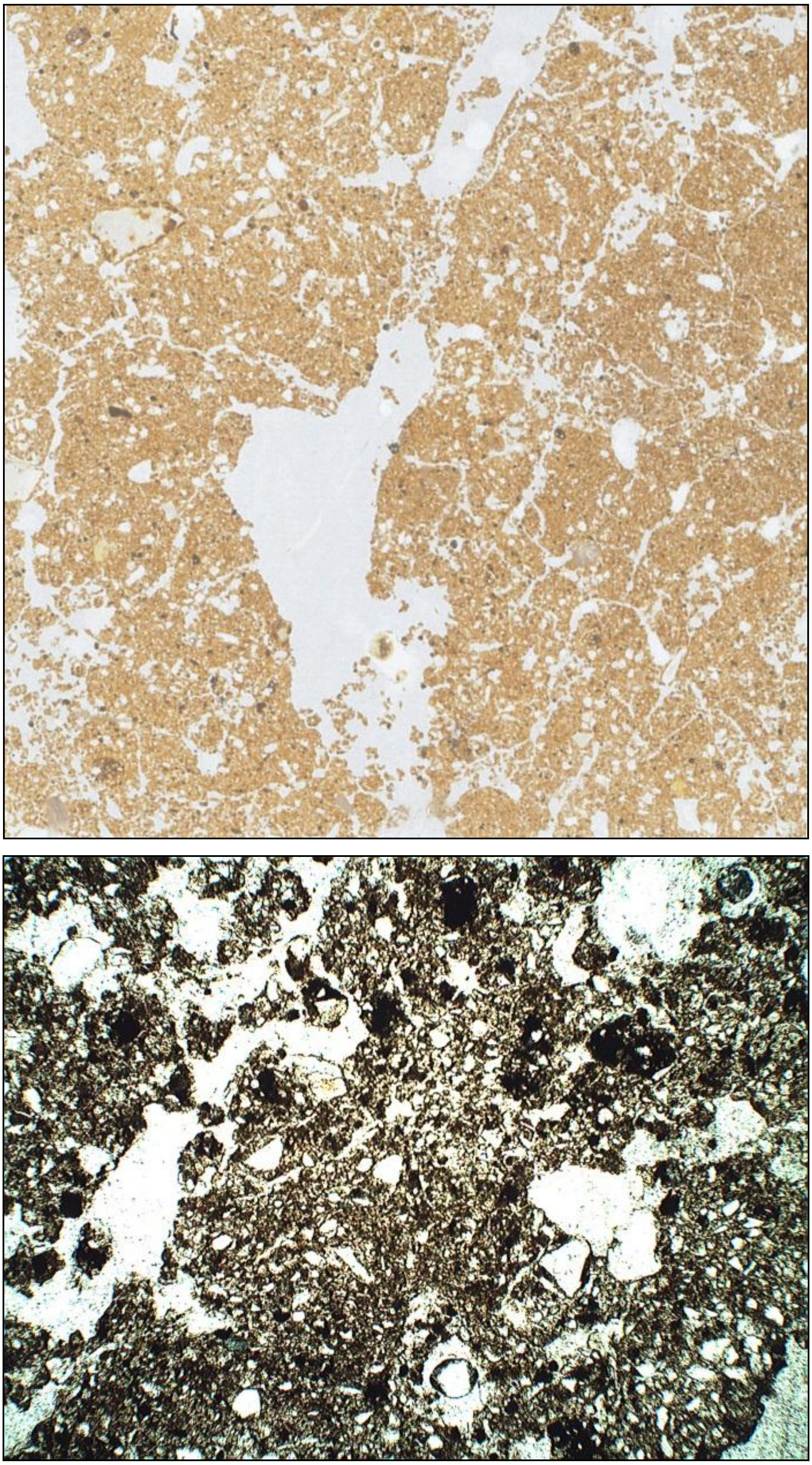


Fig. 8.14 Sample from test pit 2-08. Above, 100x magnification PPL and below, 200x magnification PPL

Figure 8.14, of the sample taken from the base of test pit 2-08 western valley, shows a dense silt loam cultivation colluvium, with parallel and straight-edged planar voids produced by a tillage implement, which was probably an ard. Also shown are dusty clay coatings and weak intercalations within prisms formed from minor internal slaking. This can be interpreted as a Bronze Age plough soil.

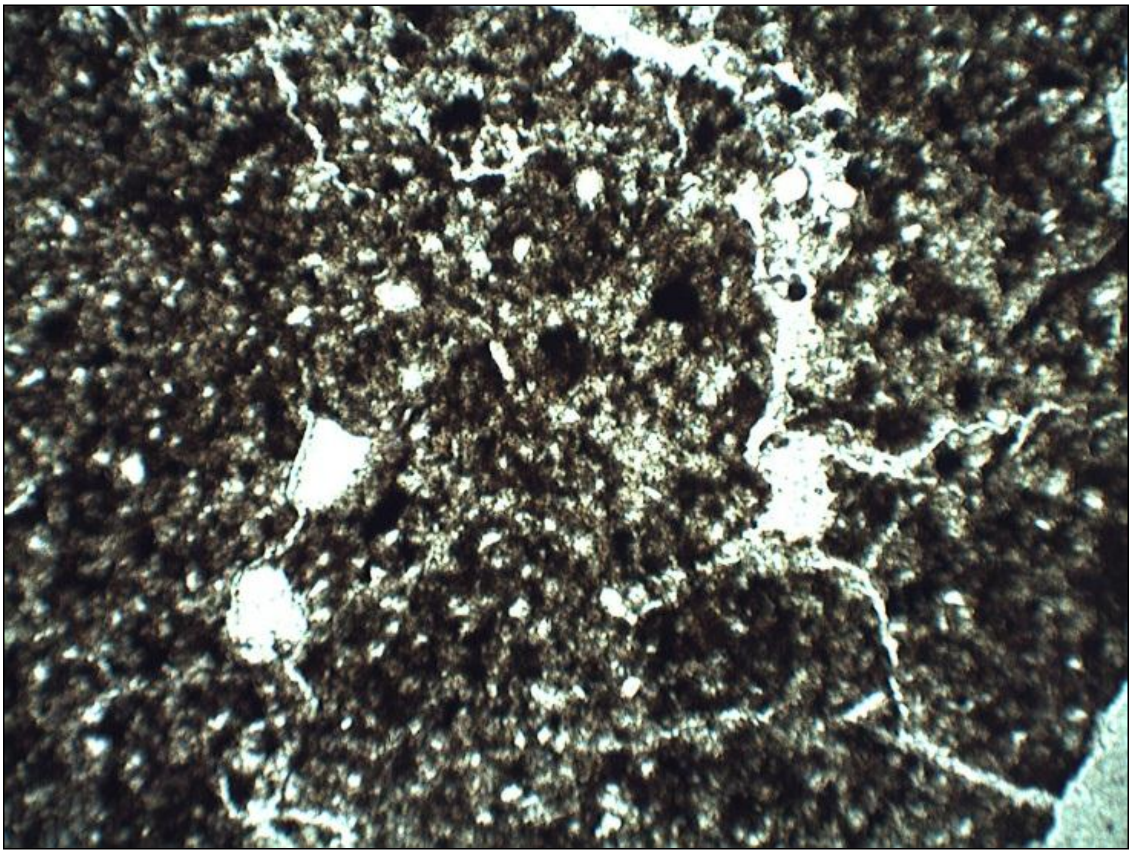


Fig. 8.15 Sample from test pit 3-08, Depth 1.40m, 100x magnification PPL

Figure 8.15 shows a sample taken from test pit 3-08, in the western valley, at a depth of 1.40m. This is the level where the colluvium meets the underlying original loessic soil. The large amount of charcoal and the dusty clay coatings indicate a clearance soil.

The last sample (Figure 8.16) shows an open porosity of fine peds created by cultivation and enhanced biological activity. Small relict fragments of the clay-rich alphosol show a colluvium being reworked agriculturally.

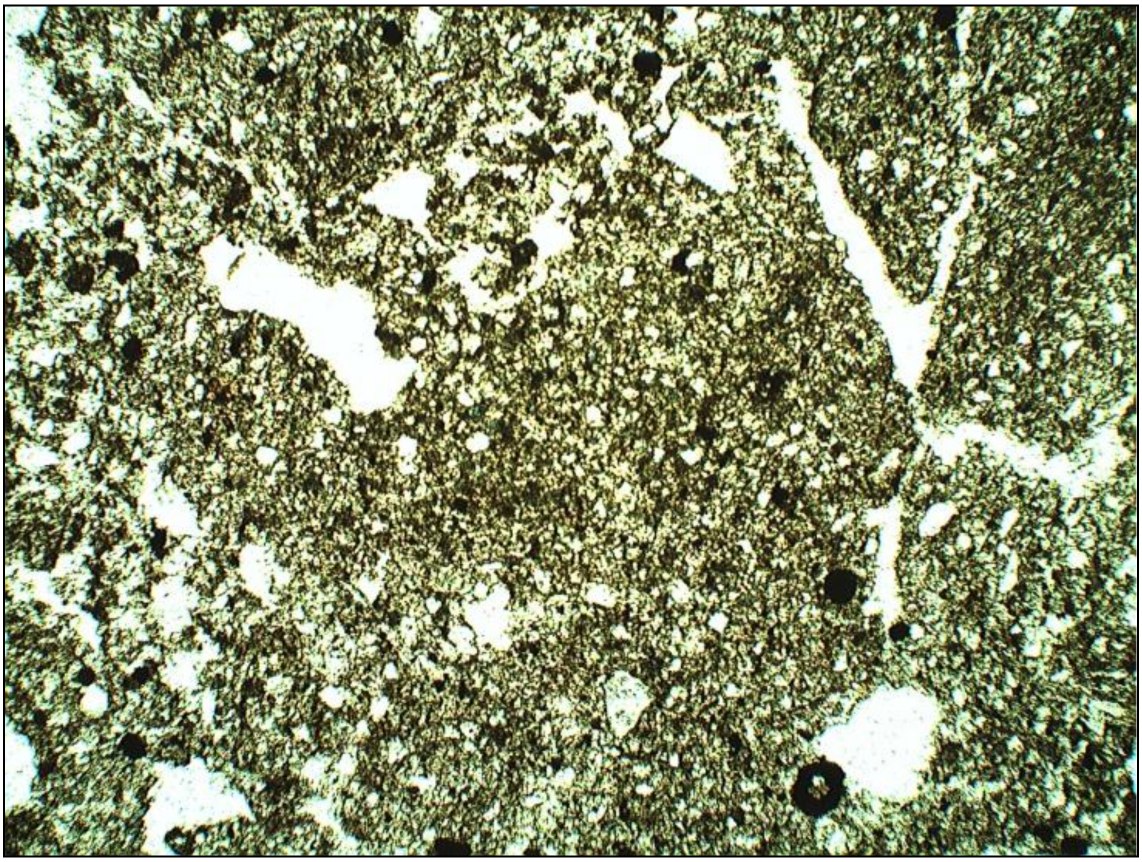


Fig. 8.16 Sample from test pit 3-08 Depth 1.02m. (Colluvium) 100x magnification PPL

Conclusions

It is impossible to say if the sediments found in the western valley once existed in the eastern valley and whether they have been totally eroded because of duration of use and topography.

However there is evidence in the western valley of early clearance followed by Bronze Age cultivation. This cultivation would appear to have had less impact than that on the eastern valley. It is of note that the four slides from test pits 2-08 and 3-08 in the western valley were described by Richard Macphail as being very similar to samples taken in Ashcombe Bottom, a Beaker site located about 10km from Black Patch in a similar Downland situation (R. Macphail, pers. comm.).

8.7 Soil Samples

Chemical analysis was under taken to look at the soil constituents and then compare the analysis with that of the micromorphology.

Table 8.1 Chemical data from valley bottom samples. (Crowther, 2008)

Context	Feature	LOI[a] (%)	Carbonate[b] (est, %)	pH[c] (water)	Phosphate-P[d] (mg g^{-1})	χ (10^{-8} SI)	χ_{max}[e] (10^{-8} SI)	χ_{conv}[f] (%)
Pit 2-06	East Valley bottom	**7.69***	**10***	8.0	0.556	28.9	1370	2.11
Pit 2-06	East Valley bottom	4.98	0.5	7.7	0.782	31.6	1710	1.85
Pit1-08	West Valley bottom	7.01	0.5	7.8	0.558	56.6	1700	3.33
Pit1-08	West Valley bottom	3.60	1	8.1	0.636	52.1	**2160***	2.41
Pit3-08	West Valley bottom	1.89	0.5	8.1	0.433	17.5	1020	1.72
Pit3-08	West	2.84	0.5	8.0	0.527	31.5	**2360***	1.33

High values of all readings are given in bold in the above table and marked with a star. The first sample from pit 2-06 on the eastern valley shows a high LOI and carbonate score. This is a sample taken from the perceived post-war colluvium.

None of the other samples, all taken from perceived prehistoric colluviums, contain much carbonate, indicating that the soils either contained very little carbonate, or were subject to leaching after deposition in the valley bottom. There is no sign of leaching in the micromorphological samples. This sample also has a high LOI (loss-on-ignition) score, suggesting a different base material. The lower the score, the more minergenic is the base material. It can be seen that the lowest values of LOI are from pit 3-08.

Two of the samples from the western valley show enhanced maximum phosphate readings, possibly indicating a higher amount of ferrous material in the base component. Lastly, all show low enhancement ($\chi_{conv}{}^{f}$(%)) from anthropogenic sources, as would be the case from colluvium. This is also reflected by the low phosphate scores.

Soil analysis has picked up differences in the two valleys in their mineregenic content and also differences between modern colluvium and prehistoric.

8.8 Field Walking

A field walking survey (Figure 8.17) was made in order to locate possible areas of artefact density, particularly those located away from hut platforms. Once again time and manpower resources had to be considered. On this basis it was decided to walk an area from the barrows to midway down the slope to the western valley encompassing Hut Platforms 2, 3 and 4. This was considered to be large enough to be representative of the topography and settlement areas.

A 20m grid was set out from the fence that runs along the line of the barrows down into the eastern valley over the spur and into the western valley (800m). The width of the combined grid varied from 100m to 160m depending on topography and land cover. Each square of this grid was walked by two people for twenty minutes. The finds were then collected and sorted into four groups: flint debitage, flint tools, fire-cracked flint and foreign stone as they were the only categories found. They were then segregated into numerical categories that were set to the overall amount of each artefact found in order to identify the level of concentration of each artefact class.

Flint debitage (Figure 8.18) is ubiquitous across the entire field walked area. There are concentrations around Hut Platforms 2, 3 and 4. There are also concentrations around the two small circular features west of Hut Platform 2 and along the line of the lynchet that starts 50m south of Hut Platform 2 in a south-westerly direction. There are also concentrations on the slope opposite Hut Platform 2 indicating activity there. Although there are far less of them, the distribution of flint tools (Figure 8.19) broadly matches that of debitage.

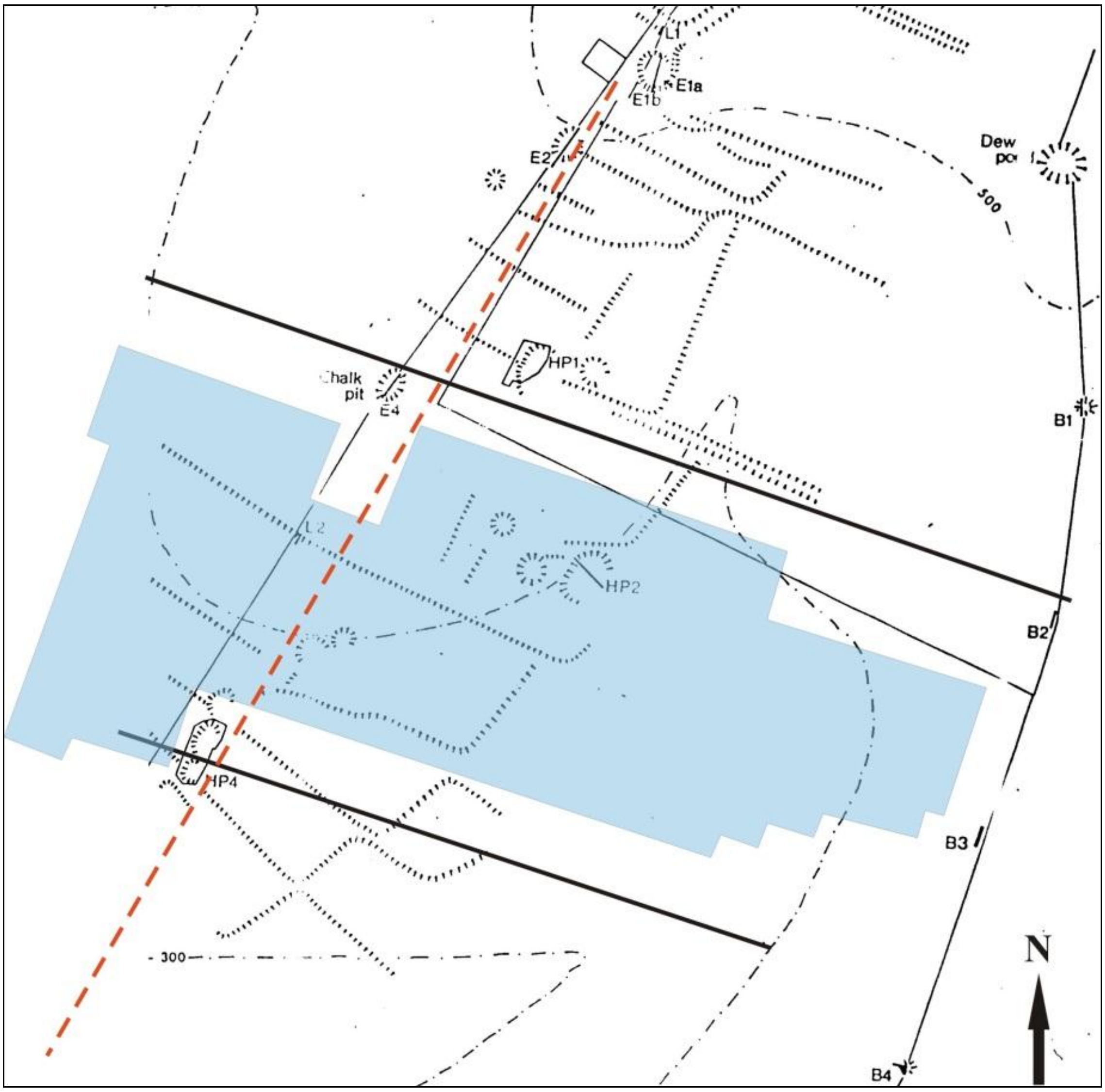


Fig. 8.17 Field walked area. After Drewett 1982

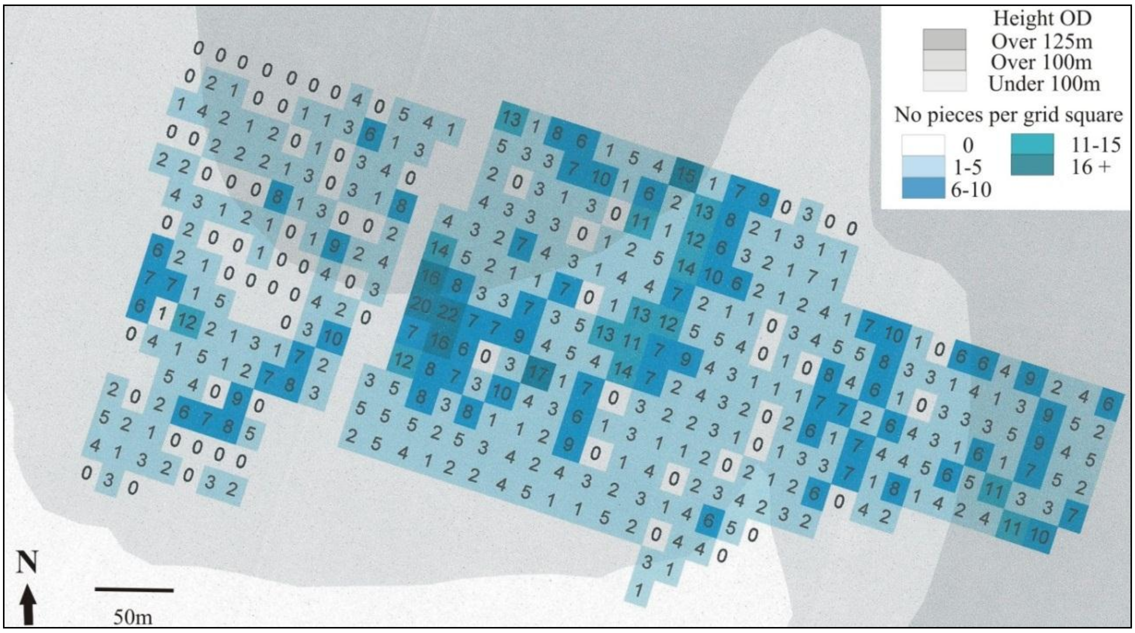


Fig. 8.18 Flint debitage

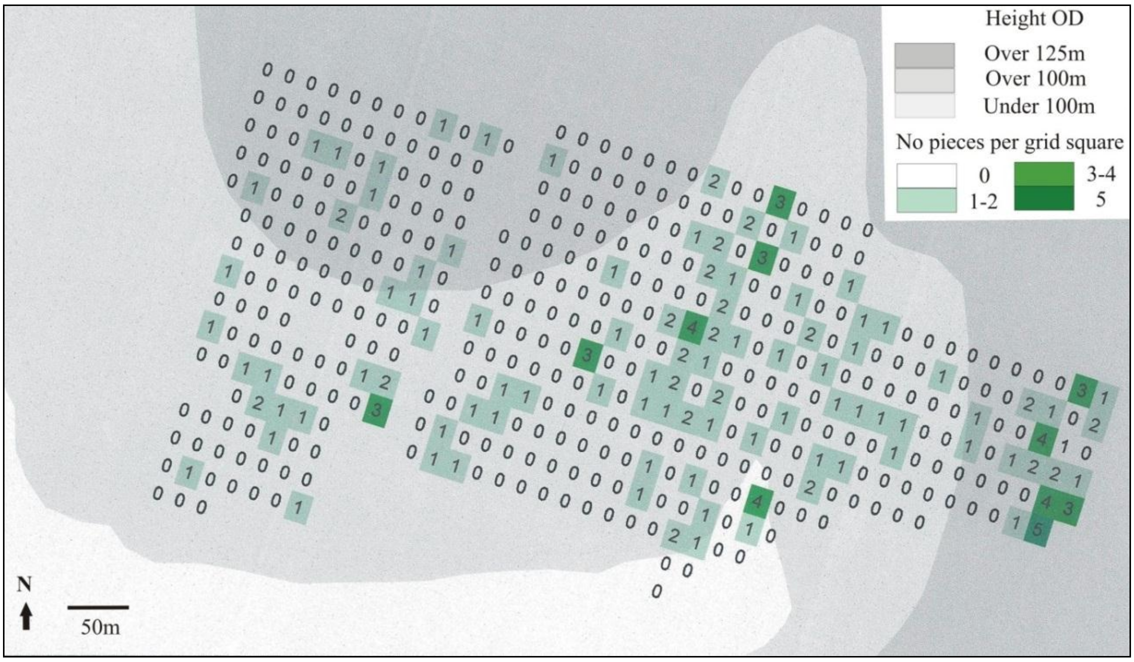


Fig. 8.19 Flint tools

Fire-cracked flint (Figure 8.20) is much less ubiquitous than debitage and tends to be congregated in clusters. These clusters were mostly placed around Hut Platform 2 and its adjacent features. There was a small cluster upslope from Hut Platform 4 and a large one about 80 to 100m downslope of it in a westerly direction. It is possible that this might have been a burnt mound as the field survey identified two large features at this point. There is the possibility that they are bomb craters, with the heat of the explosion causing the fire-cracking. However, given the short period of heat, this is unlikely. There is a large feature here, which was on the first Ordinance Survey map dated 1878/9 and is still there in the 1972 edition but not marked at all on more current editions.

There was very little fire-cracked flint around Hut Platform 3.

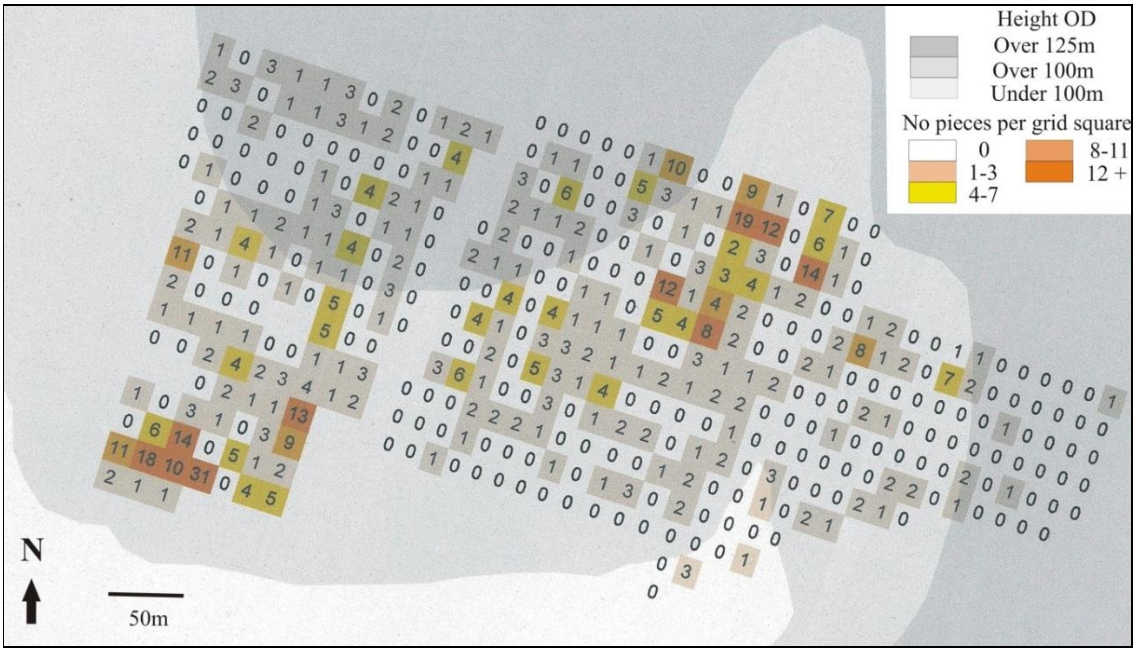


Fig. 8.20 Fire-cracked flint

There is very little foreign (non-local) stone (Figure 8.21) but there are small clusters around Hut Platform 2 and downslope of Hut Platform 4 in the same location as the fire-cracked flint.

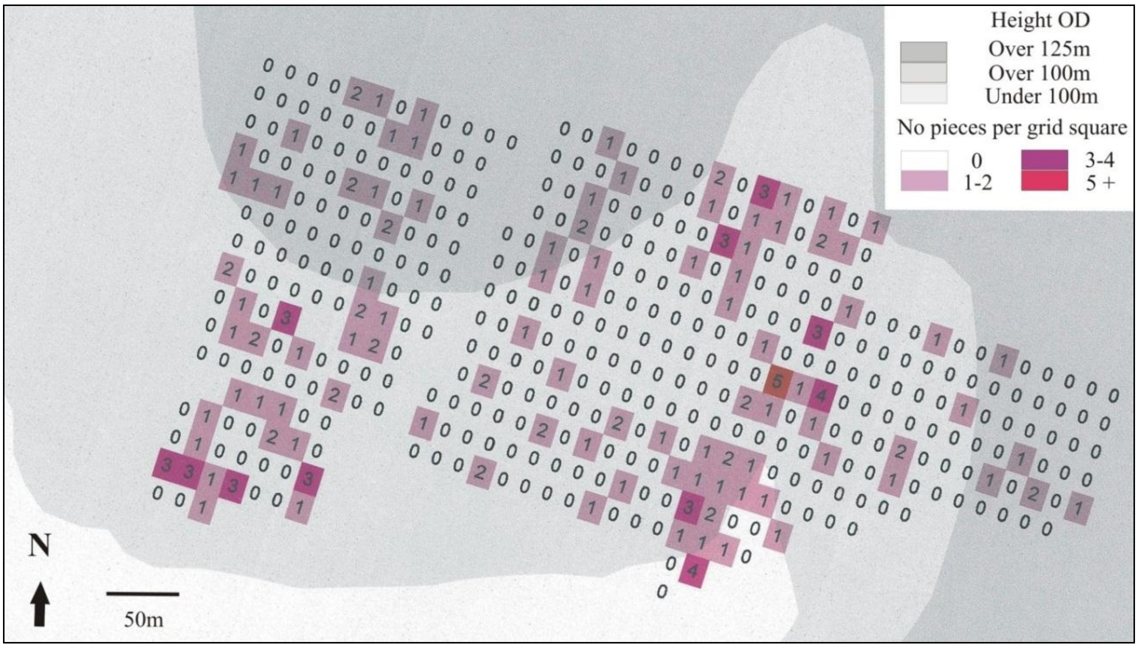


Fig. 8.21 Foreign Stone

Neolithic Finds

During field walking, a number of early Neolithic axes, one polished, were found (Figures 8.22 and 8.23).

Fig. 8.22 Neolithic Axes found during Fieldwalking at Black Patch. Scale 10mm

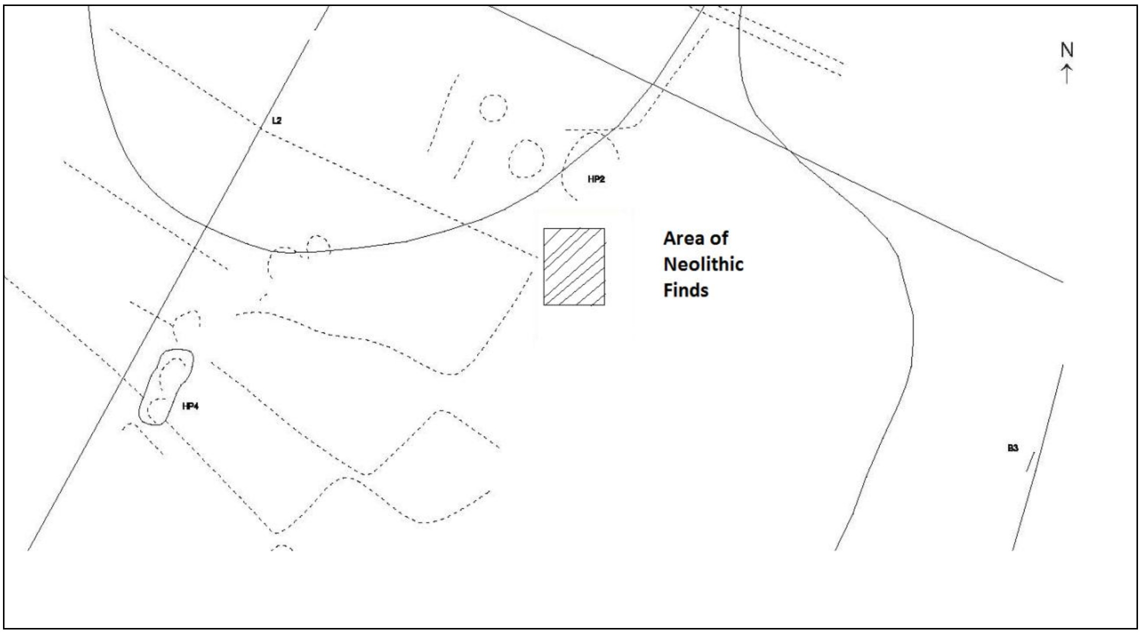


Fig. 8.23 Area covered by Neolithic Flints

The general area was again walked the following year in an effort to find more Neolithic pieces. Another seven Neolithic pieces were found: a core, an axe fragment, three scrapers and two flakes. These were all judged to be early Neolithic by Haken. He also discovered that two of the axes found the previous year were actually the broken halves of the same axe. It had probably broken where it had been hafted (Haken 2008, 27-32).

These two halves were found 100m apart. The area over which the flint artefacts were found indicates a flint scatter. This deduction is supported by the number of utilitarian and waste flakes found the following year. It is impossible to tell whether they came from a short-term encampment or stopping place, or a depositional pit, because of plough movement. It is also interesting to note that this general area has far fewer artefacts (as found field walking) than its surrounding area.

8.9 Land Survey

8.9.1 Introduction

A land survey was executed to look for further traces of human agency in the vicinity of the settlement. The extent of the area surveyed (Figure 8.24) was from Enclosure 1 to the bottom of the scarp slope and from the top of the eastern ridge to the bottom of the scarp slope on the western valley.

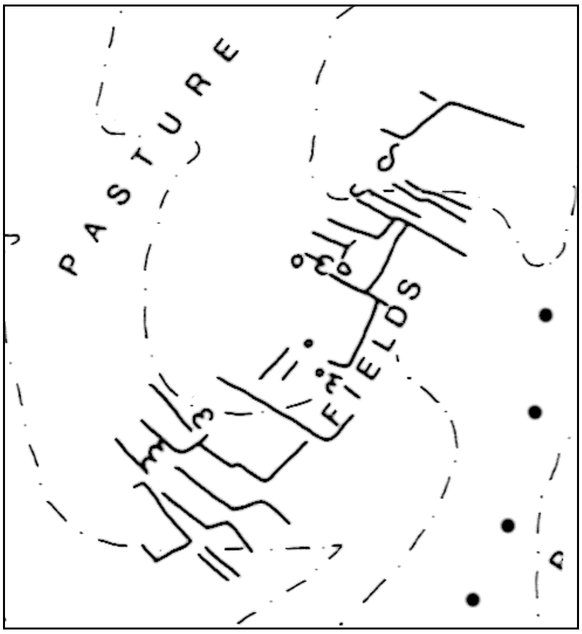


Fig. 8.24 The area covered by the landscape survey: barrows are marked ●
After Drewett 1982, Fig. 36, 394

Fig. 8.25 Aerial Photograph of Black Patch and its surrounding area taken by the RAF in 1957. North is at the top of the photograph and area of the survey is slightly left of centre. Evidence of the settlement and field system are still clearly visible. F22 50-RAF-2235 1AUG57 1

Fig. 8.26 Digitally enhanced and enlarged from Fig. 8.25, by author, showing field system in detail. F22 50-RAF-2235 1AUG57 1

8.9.2 Methodology for Survey

A base line was laid out from Enclosure 1 to the bottom of the valley. Tapes were then laid at right angles to both sides of the base line every 50m or closer if required. Features still visible on the ground were then plotted with the use of further tapes.

Fig. 8.27 Lynchet running across the picture just below horizon

8.9.3 Results of Survey

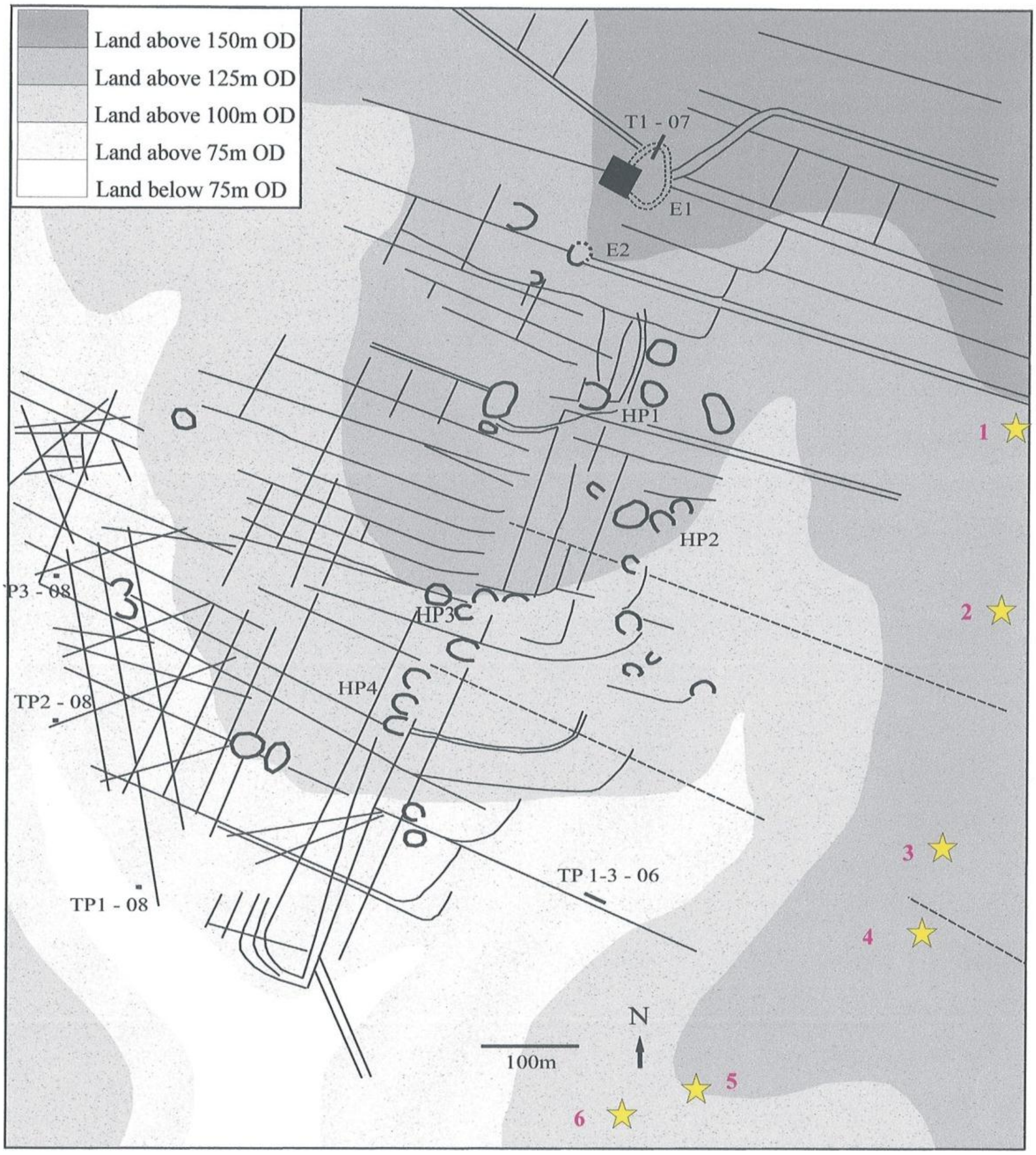


Fig. 8.28 Survey and survey area. Drawn by J. English. Gold stars represent barrows that are intervisible with the settlement sites

Key:

TP1-08, 2-08 and 3-08 Western valley test pits

TP1-3-06 Eastern Valley bottom test pits

T1-07 Enclosure1 (E1) test pit.

HP Hut platform

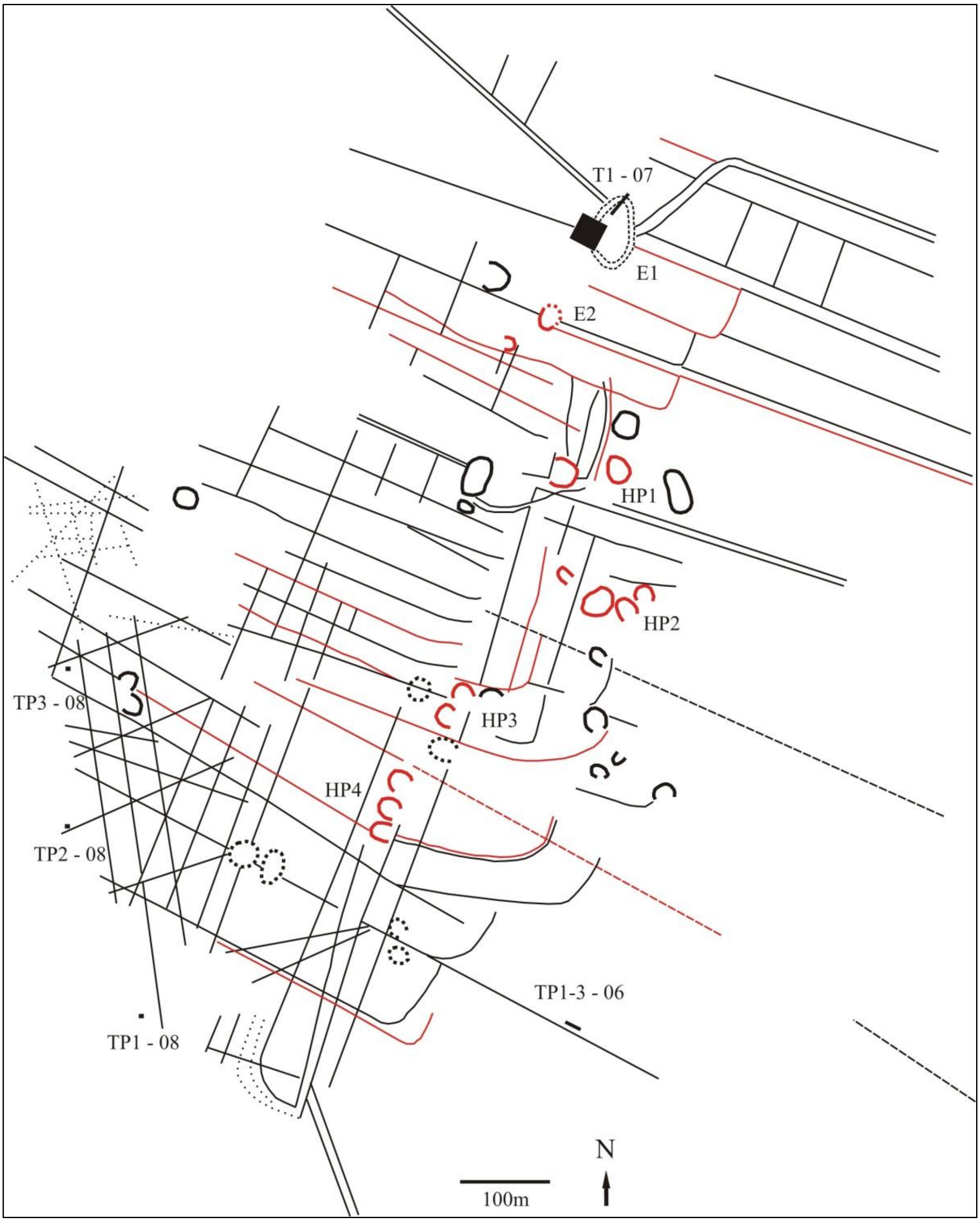


Fig. 8.29 Showing features in red from Drewett's survey. Drawn by J. English

Field system construction

The basis for the field system structure is a rectilinear system constructed across the spur on which most of the settlement sites are located. The longitudinal boundaries were probably laid out first only later being sub-divided by cross division (Field 2008, 207).

Figures 8.30 and 8.31 show the rectilinear system. Figure 8.30 shows what can still be seen on the ground and Figure 8.31 hypothetically fills in some gaps between observed lynchets to make the system more obvious.

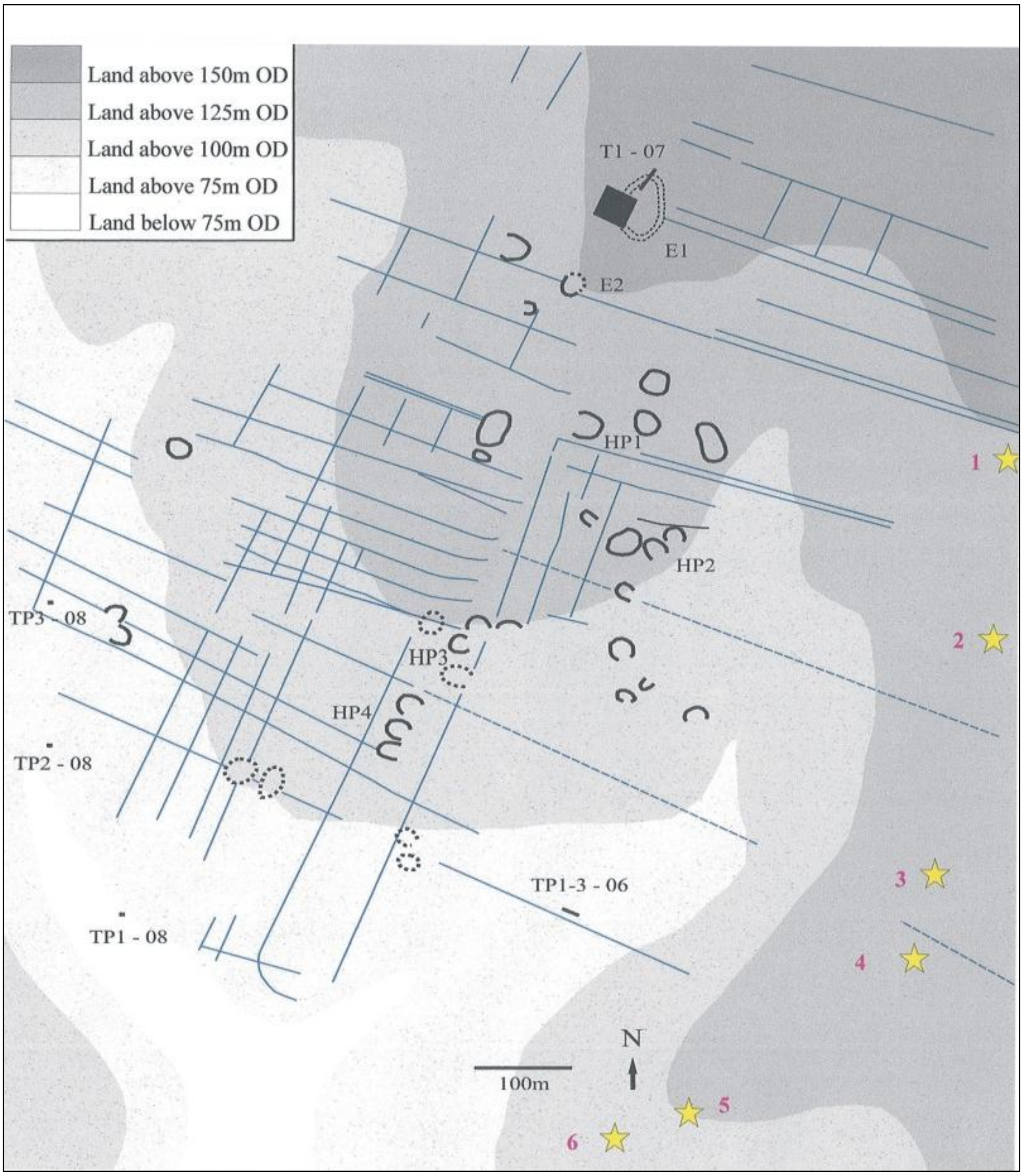


Fig. 8.30 Showing rectilinear field system in blue. Drawn by J. English

In Figure 8.31 the gaps between nne/ssw lynchets have been filled in by a brown line showing the hypothetical basis for the rectilinear system that crosses the spur.

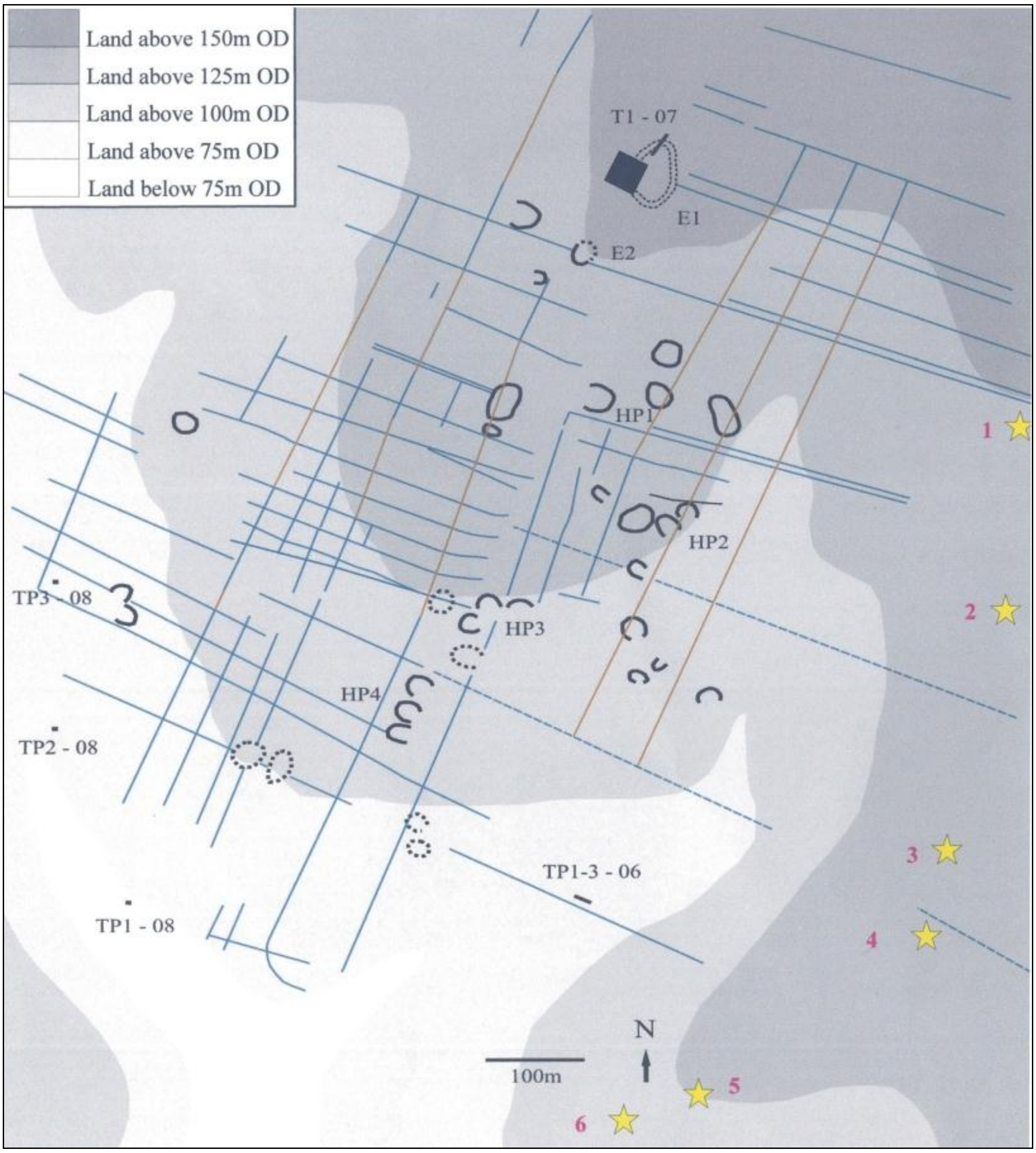


Fig. 8.31 Rectilinear field system with gaps in visible system filled with brown hypothetical lines. Drawn by J. English

The major nw/se lynchets seem to divide the land with one barrow per holding, barrows 1, 2, 3 and 4. All of the barrows had been disturbed by earlier excavation. Barrows 1, 2 and 3 are dated by the excavator as pre-1400 Cal BC. They all contained or were associated with Collared Urns. Barrow 3 contained a child burial from which a carbon 14 date of 1880BC was obtained. Barrow 4 was the only barrow that shared structural similarities with excavated Middle Bronze Age barrows in Sussex. This is similar to the nearby barrow at Itford Hill where a flint platform of large flints was capped with many struck flints. 96.6% of these flakes were waste flakes. The excavator suggested that this barrow, although there was no conclusive dating evidence, could be contemporary with the settlement site and certainly post 1400BC (Drewett 1982, 355-361).

Figure 8.32 shows the next development, a re-organisation from a sub-divided rectilinear system to one with fields looped onto each other. These loops are still recognizable on the ground. Re-organisation sometimes uses older boundaries but not always. Re-organised field boundaries are shown in magenta. The changing of a field system in the Later Bronze Age is quite common (English pers. comm.)

The other construction is of a separate field system to the south-west of the settlement site. This is shown in green in Figure 8.33, which also shows all the other constructional episodes which are still visible on the ground.

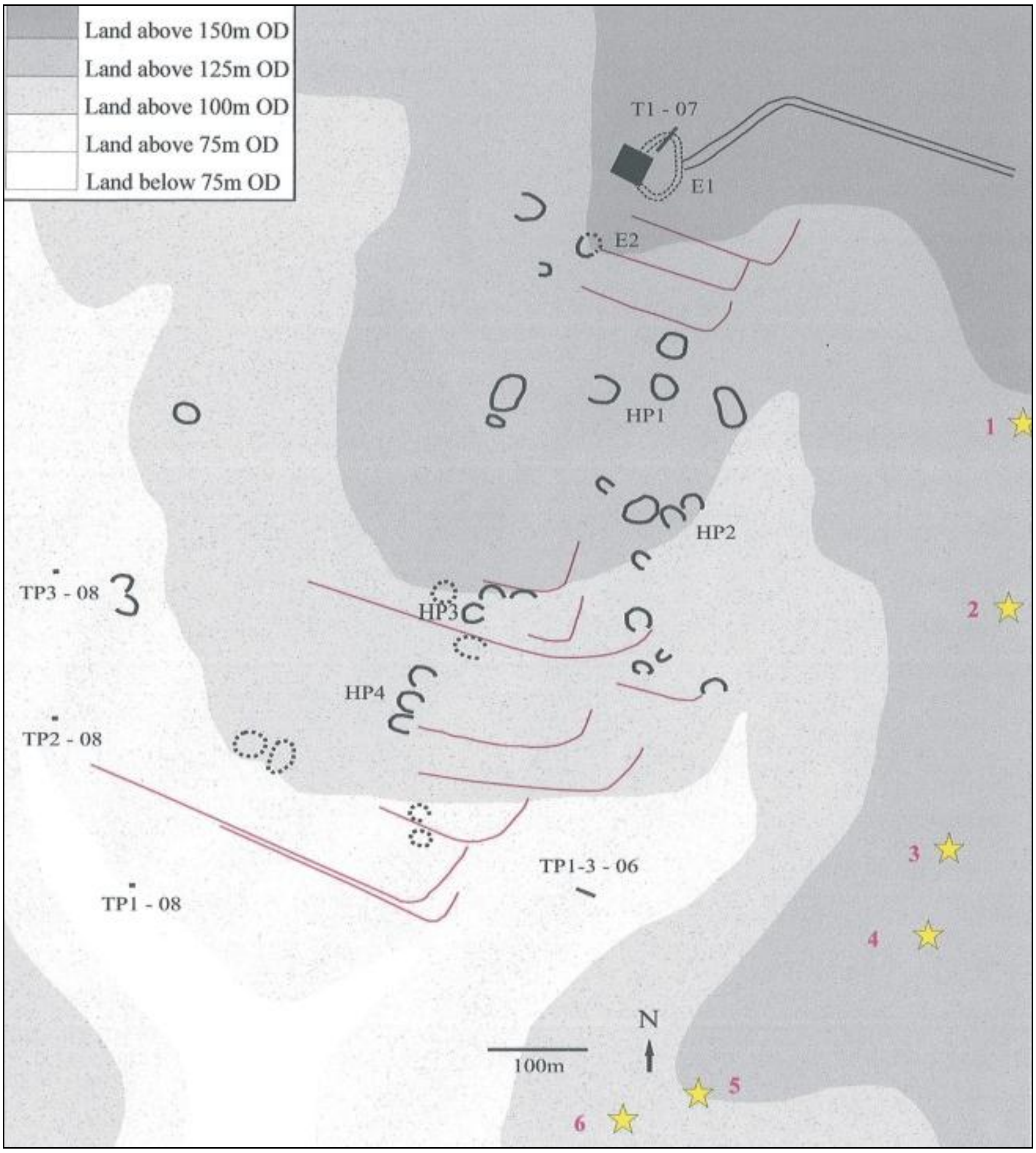


Fig. 8.32 Field re-organisation. Drawn by J. English

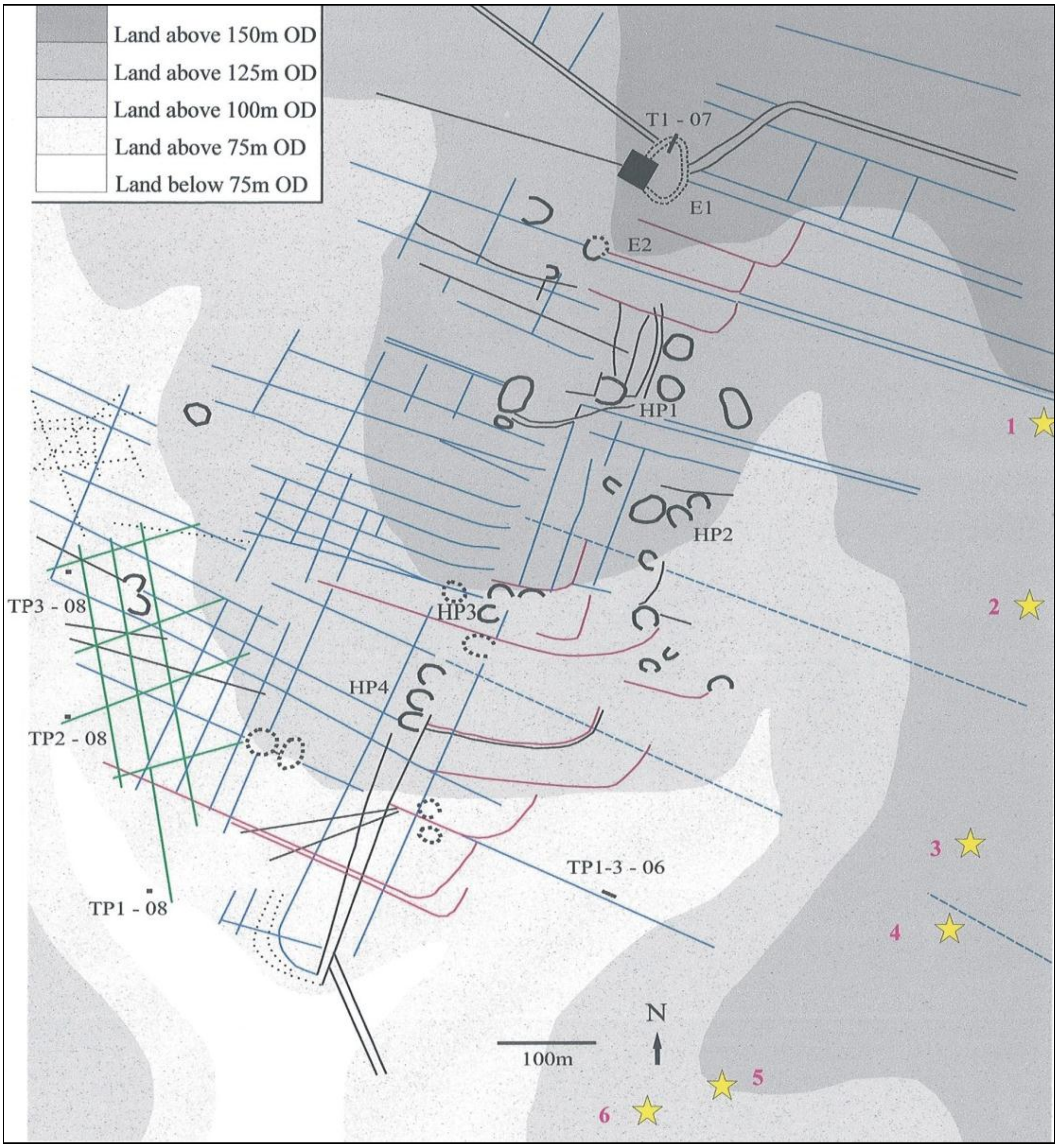


Fig. 8.33 Composite of different field construction. Colours and symbols used are as in other Figures in this section. Drawn by J. English

Enclosure 1

A separate larger scale plan was made of Enclosure 1, as the aerial photography and what was visible on the ground differed from Drewett's plan.

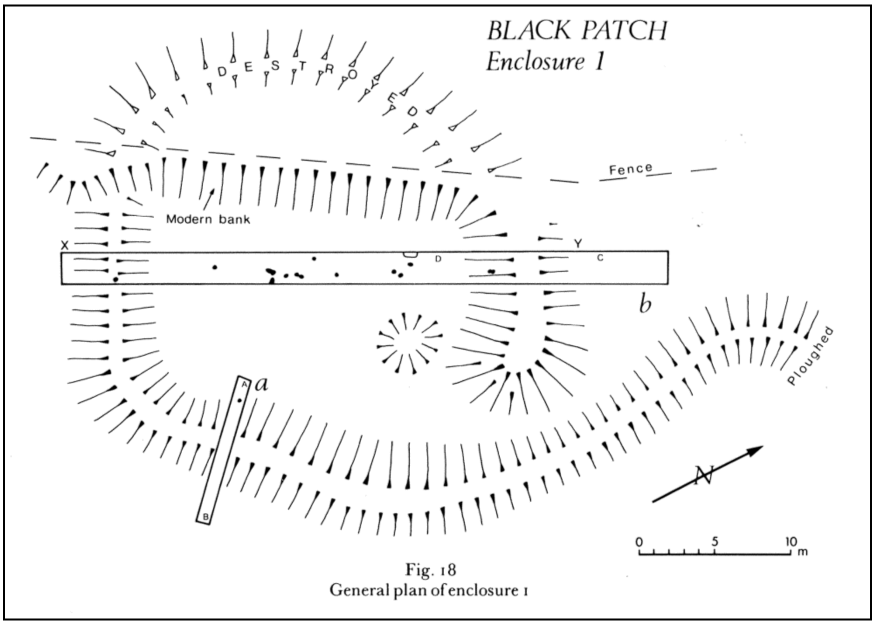


Fig. 8.34 Drewett's Plan of Enclosure 1. After Drewett 1982 Fig.18 348

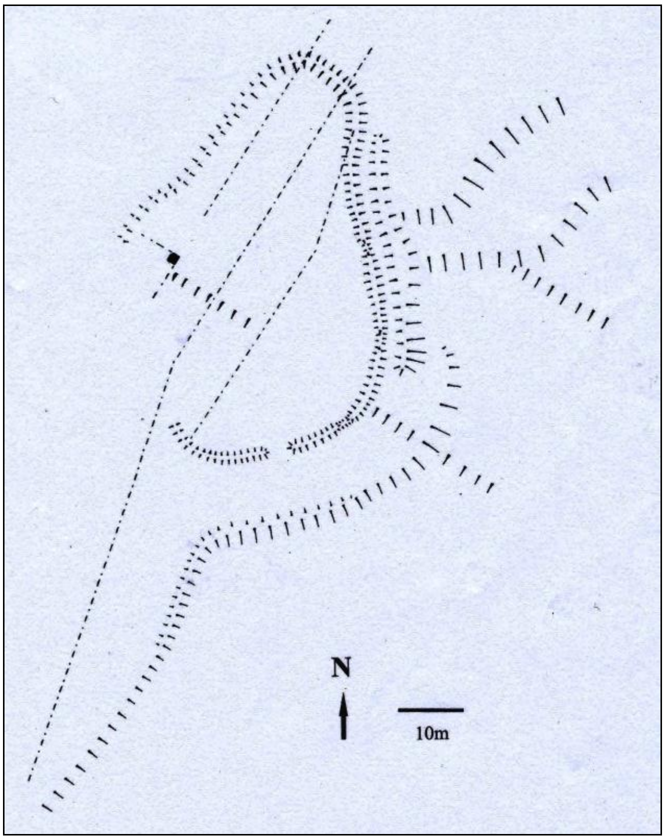


Fig. 8.35 Enclosure 1 Survey. Drawn by J. English

Figures 8.35 and 8.36 show that Enclosure 1 is later than the lynchets which clearly go under the banks of the Enclosure. The dotted line shows the modern path.

Fig. 8.36 Detail from RAF aerial photograph, 1957, showing Enclosure 1. F22 50-RAF-2235 1AUG57 1

Test Pit 1-07

Given the above anomaly, test pit 1-07 was dug to see if any underground evidence would show either Drewett's or English's plan to be correct.

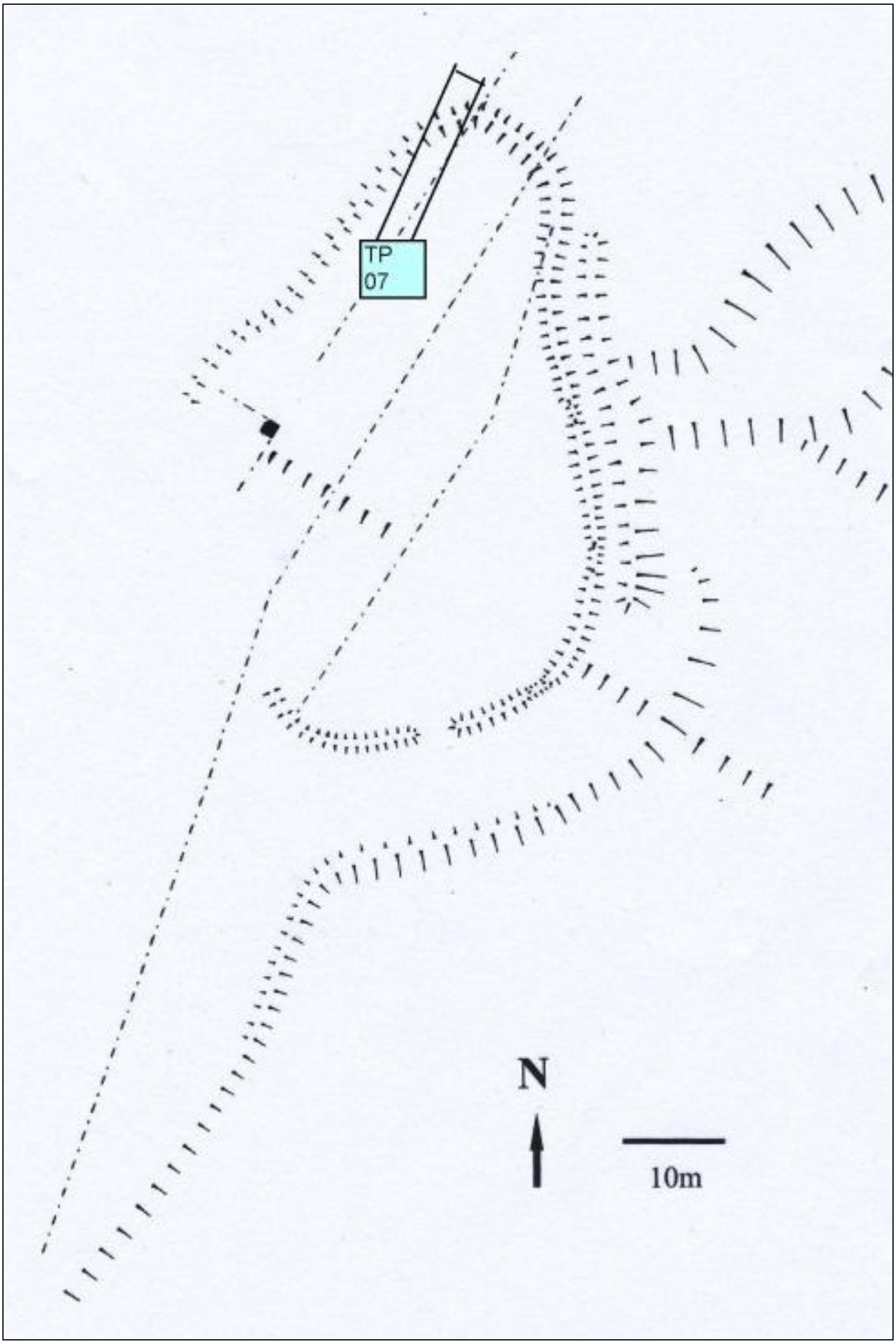


Fig. 8.37 Location of test pit 1-07. Scale 10m

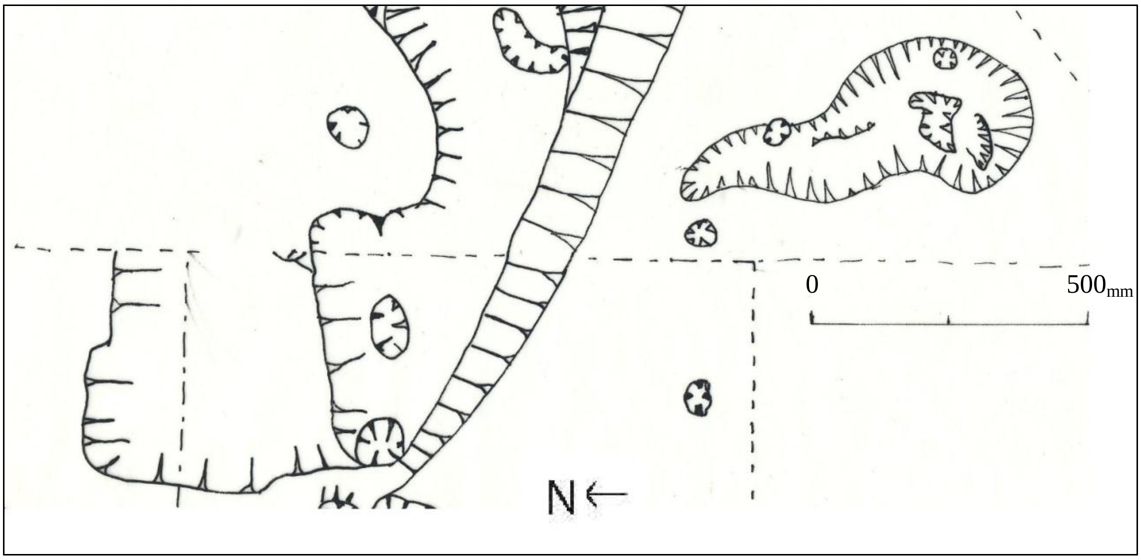


Fig. 8.38 Plan of northern ditch found in test pit 1-07. Scale 500mm

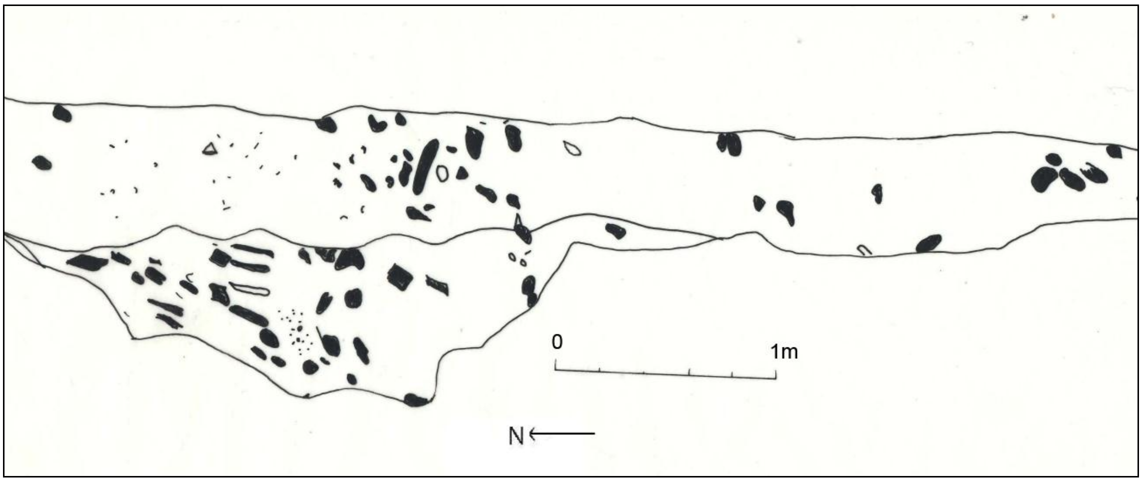


Fig. 8.39 West Facing Section of northern ditch found in test pit 1-07. Scale 1m

Figures 8.38 and 8.39 show the plan and section of the outer ditch of Enclosure 1.

There were numerous flint artefacts in the topsoil of test pit 1-07, eight soft hammer flakes, 15 hard hammer flakes, one scraper, 17 fragments, 15 burnt fragments, two cortical nodules and a beach pebble.

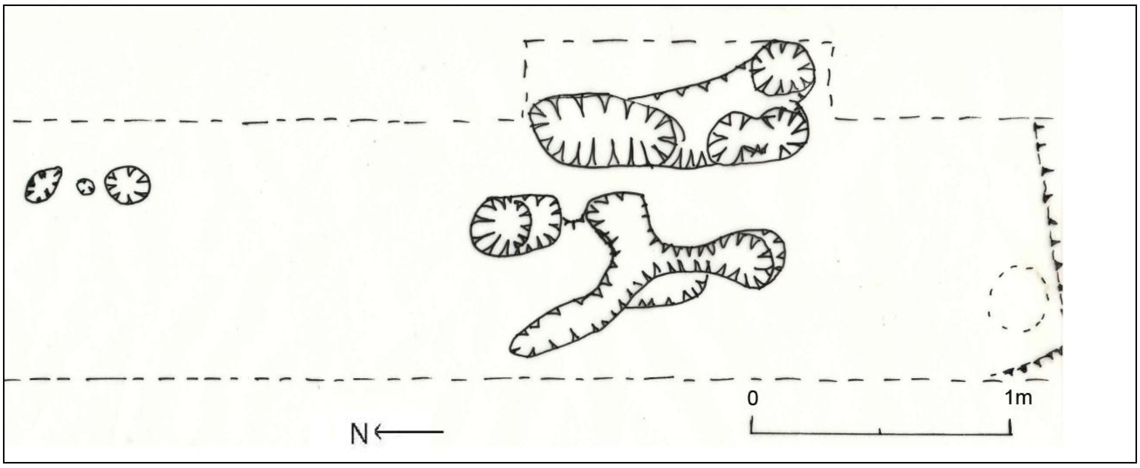


Fig. 8.40 Plan of inner (southern) ditch found in test pit 1-07. Scale 1m

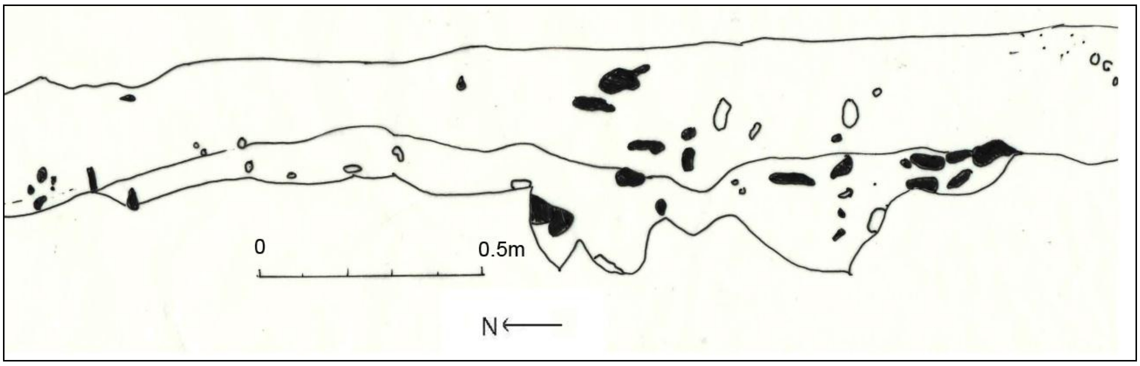


Fig. 8.41 West Facing section of (southern) internal ditch found in test pit 1-07. Scale 0.5m

Figures 8.40 and 8.41 show the plan and section of the southern linear feature. This is located 10m south of the ditch and appears to be one side of the double lynchet that approaches the enclosure from the north-west. The plan and section probably are indicative of a hedge. This enclosure appears to postdate the lynchets that are part of the field system.

The plan also shows English's plan to be correct.

8.9.4 Prehistoric Landscape Phases at Black Patch

Although large parts of the survey area have been subjected to a heavy ploughing regime, particularly since the Second World War, sufficient information has been collected to enable a probable phasing of the uses of the prehistoric landscape. Inevitably there will be gaps, problems with absolute dating and in some cases, an inability to organise phases chronologically. With these caveats in mind, a history of land use from the last ice-age to the end of the Late Bronze Age will be postulated.

Earliest inhabitation.

The earliest artefacts, found both in the excavations and other investigations, were Mesolithic and Early Neolithic. 26 pieces of debitage from this period were found in the 2005-6 excavations, mostly in the upper layers of Hut A. These numbers in an area 20m x 22m, indicate a reasonable amount of use in these periods. The find of a Mesolithic flake, on the top of the periglacial sediment layer in the valley bottom trenches, points to possible visits by Mesolithic people soon after the end of the last Glacial. Neolithic flints found in the modern colluvium from the valley bottom show the spread of the activities.

The spread of Early Neolithic axes and debitage found during the field walking investigations in the eastern valley probably indicates more than transient use.

Soil micromorphology has identified a clearance soil in the western valley. This is probably the earliest indication of land management found in the area as the sample was taken from the base of the colluvial soil just above the undisturbed loess. Whether this was primary or secondary clearance is impossible to say. The pre-existing land surface at a burial mound less than 1km away was interpreted, on the basis of molluscan evidence, as being open grassland with a few shrubs, before the barrow was built, followed by a period of dense vegetation (Thomas 1975, 148-150). An antler pick from the ditch surrounding the barrow has been carbon dated at 4310+/- 110bp: 2360 BC (HAR_940) (Drewett 1975).

Primary clearance at Ashcombe Bottom (situated 10km from Black Patch) has been dated by Allen (2005, 27) to c3750 BC as it was probably associated with the nearby causewayed enclosure at Offham. At Ashcombe this clearance was followed by woodland regeneration and further clearance until the Late Neolithic- Early Bronze Age + Beaker periods when the land was either ploughed or under pasture.

At the Neolithic site at Bishopstone, 4km southwest of Black Patch, the excavator concludes, from palynological evidence, that whilst the site begins in a woodland setting, the pace of clearance increases around 2510 BC as the signs of human activity begin to increase (Bell 1977).

Detailed pollen analysis by Waller and Hamilton (2000) at Mount Caburn, situated 8km northwest of Black Patch, indicates human disturbance from about 4450 cal BC and evidence of cereal grains about 3750 cal BC, followed by woodland regeneration around 3450 cal BC, which resulted in the establishment of yew woodland that lasted for the next 1400 years.

Given this evidence from nearby sites, it is probable that some woodland regeneration would have taken place in the Neolithic with final clearance in the Late Neolithic period.

Barrows, Field Systems and Farming

At some stage in the Late Neolithic-Early Bronze Age, probably from about 2000BC, given the evidence from surrounding sites, more permanent farming began to take place. Ard type cultivation on a colluvial soil has been detected by soil micromorphology in the bottom of the western valley. Cultivation of this type has been found in several dry valley bottoms in Sussex. Allen lists the following: Cow Gap (Bell 1981); Belle Tout (Bradley 1982); Kiln Combe (Bell 1983); Malling Hill (Allen 1995a); Southerham Grey Pit (Allen 1995b); Ashcombe Bottom (Allen 2005a); Cuckoo Bottom (Allen 2005b); Pycombe (Allen 2005b).

Around this time, a number of round barrows were erected in the area. Grinsell (1934, 218) describes the area of the Downs west of Lewes and Alfriston as the ‘most prolific barrow-areas in East Sussex’. Unfortunately many have disappeared under the effects of the plough or have been the subject of either badly or unrecorded excavations (Grinsell 1934, 230). Eleven barrows are intervisible from the Black Patch site and they are presumably meant to be seen from the settled area and are relevant to it.

Figure 8.42 shows the location of barrows intervisible with the settled area. It should be noted that not all the barrows apparently contained burials.

Barrow 1 contained several sherds of Beaker pottery and was designated as probably of that period (Drewett 1982). It also contained one sherd probably from a collared urn.

The only pottery found at Barrow 2 was found in the top soil. Two sherds of Beaker and two sherds of urn material pottery were found. However the excavator was unable to put a date to it.

Barrow 3 contained a complete collared urn. The C 14 date from the bones of an inhumation of a female child in this barrow was (HAR 3976) 3830 +/- 80 BP.

Barrow 4 contained no pottery or burials but its construction methods appeared to be similar to the Itford Hill cemetery Barrow. This Barrow was dated as post 1400 BC.

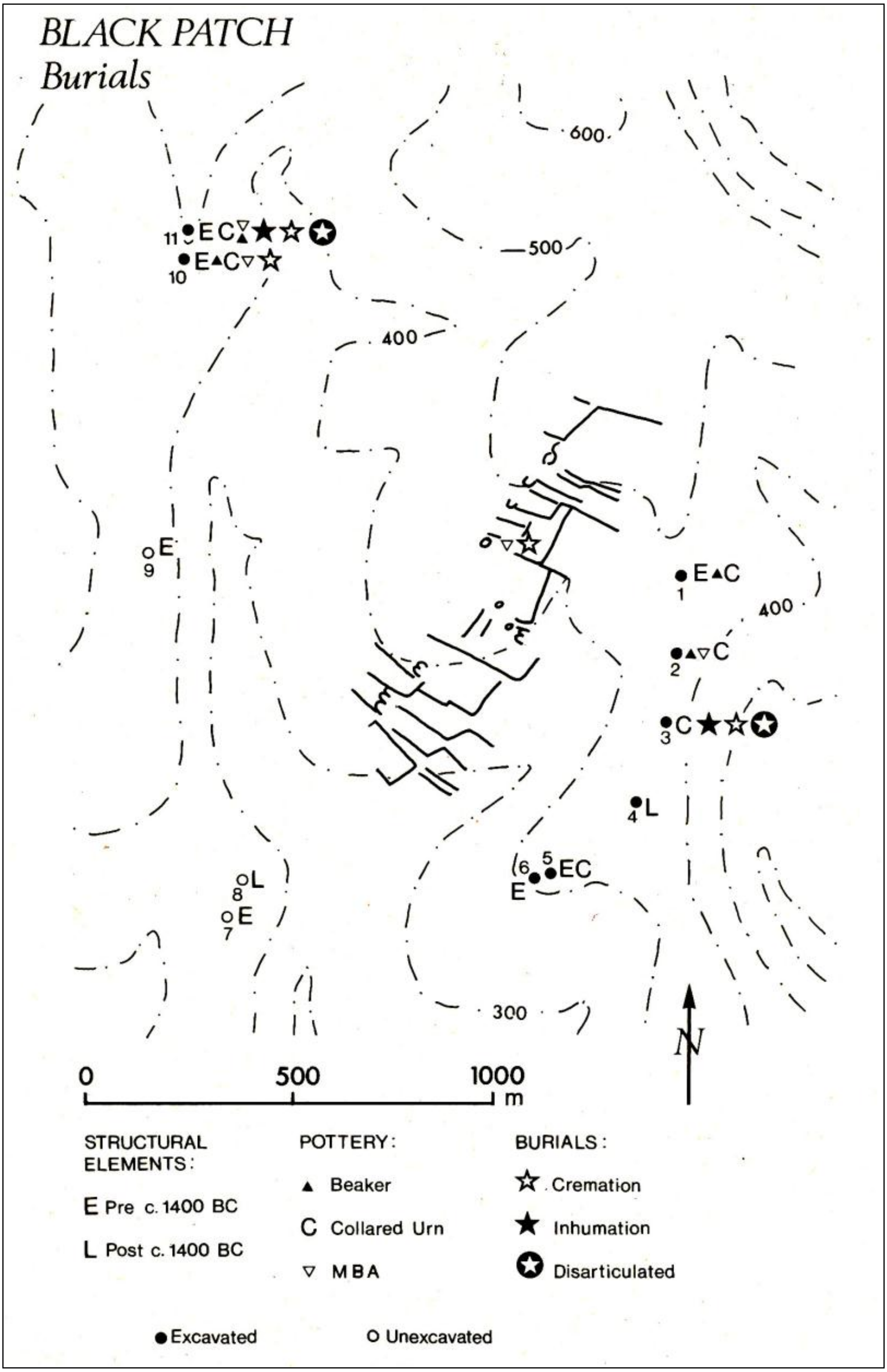


Fig. 8.42 Location of Barrows intervisible with the settlement area which is in the centre of the plan. (Drewett 1982, fig. 23, 354)

Barrow 5 contained one sherd of probably Early Bronze Age pottery and a leaf-shaped arrowhead in its ditch silts.

Barrow 6 was dated to the Early Bronze Age because of its structure.

Barrow 7 was partially excavated by Holegate in 1984. It contained the remains of a single cremated body in a collared urn. This was described by Drewett as a secondary burial (Drewett 1987; Holegate 1987).

Barrow 8 appeared as a broad, flat-topped mound of Middle Bronze Age date (Drewett 1982).

Barrow 9 appeared to be very similar to Barrow 7 and was allocated a similar date.

Barrow 10 was a large round barrow of Early Bronze Age bowl type. Scattered cremation remains were found in its surrounding ditch. The centre of the mound had recently been explored.

Barrow 11 had also been disturbed but it still contained two small collared urns probably associated with cremated remains found elsewhere in the barrow.

Taken as a group, these barrows appear to bound an area of Downland where some transient agriculture was already taking place. Most are dated to the Early Bronze Age. They may have indicated a land boundary or had some sort of cosmological significance (Field 1998). In an agricultural setting, the rising or setting of the sun or moon behind a certain barrow from a central point inside the series of barrows would also make a very useful calendar (Parker Pearson 1996). The fact that so many are Collared Urn burials implies co-operation amongst their builders as to the siting of the barrows as they were probably used contemporaneously. Drewett (1987, 232-4) suggests a possible association with the Hobbs Hawth Neolithic-Early Bronze Age site less than one kilometre distant from Barrow 7 to the south. This is also close to the area of clearance and ard-based farming. He is also strongly of the opinion that the Early Bronze Age barrows pre-date the settlements. Barrows 1-4 appear to be relevant to the field system. The main axis of the constructed rectilinear system runs across the spur into the valley and up to the barrows. These are positioned in such a way that the long major boundaries seem to divide the land in four with one barrow per holding. Barrow 1 would have been the first to be built, being Beaker (C 2600-2000 BC). Collared Urn sherds in Barrow 1 and Collared Urn and Beaker pottery associated with Barrow 2 and a C14 date of 1880 BC and Collared Urn pottery in Barrow 3 suggest the three were possibly in contemporaneous use around 1880 BC. Ongoing use of the barrows is suggested by the date for Barrow 3 of 2480-2030 cal BC and the suggestion by Ellison

(1987, 22) that the Collared Urn from Barrow 3 is secondary series i.e. post 1880 BC. This indicates a possible construction date for the first rectilinear phase of the field system between 1900 and 1400 BC. This compares with dating of 2020-1610 cal BC for the field system at terminal T5 at Perry Oaks (Framework Archaeology 2006, 104). Yates (2007) is of the opinion that similar systems became widespread in certain areas, for example The Yorkshire Dales, Dartmoor and the Salisbury Plain in the middle of the second millennium BC. The suggested chronology for the Black Patch system is thus in line with appearance of field systems in other areas.

Barrett (1994) suggests that the change from long to short fallow cultivation using manure and ploughs in an effort to intensify production tightened control over land usage. This has led Johnson (2008, 277) to state 'The inheritance of land within kin groups therefore became of much greater concern and this was expressed first through the physical expression of genealogy typified by linear arrangements of barrows and the burials within cremation cemeteries and then through the enclosure of land by boundaries'.

On the basis of the method of construction, Barrow 4 appears much later and could have been used to divide a larger block or for the creation of a new block, this new block being aligned on Barrow 4.

This could possibly be for splitting an inheritance or accommodating a different (probably a connected kin) group.

The idea of field systems being aligned on existing monuments was first mentioned by Bradley for the field system south of Nettlecombe Tout hillfort in Dorset. Here the field boundaries of both axes are aligned on barrows (Bradley 1978, 269-71). Pryor (1998, 85) also noted that field systems in the fens had round barrows and ring ditches evenly spaced in the later field systems. Finally, Chadwick and Fitzpatrick (2006, 43) suggested that the layout of some later ditches may have been based on ringditch 6107. However whilst alignments of boundaries on existing monuments are common, the author is unaware of other examples of the alignment of boundaries on either side of a barrow. This is possibly indicative of a family or kin group enclosing its own barrow in the field system, enhancing its claims to ownership of that part of the field system rather than having the field alignment controlled by a third party.

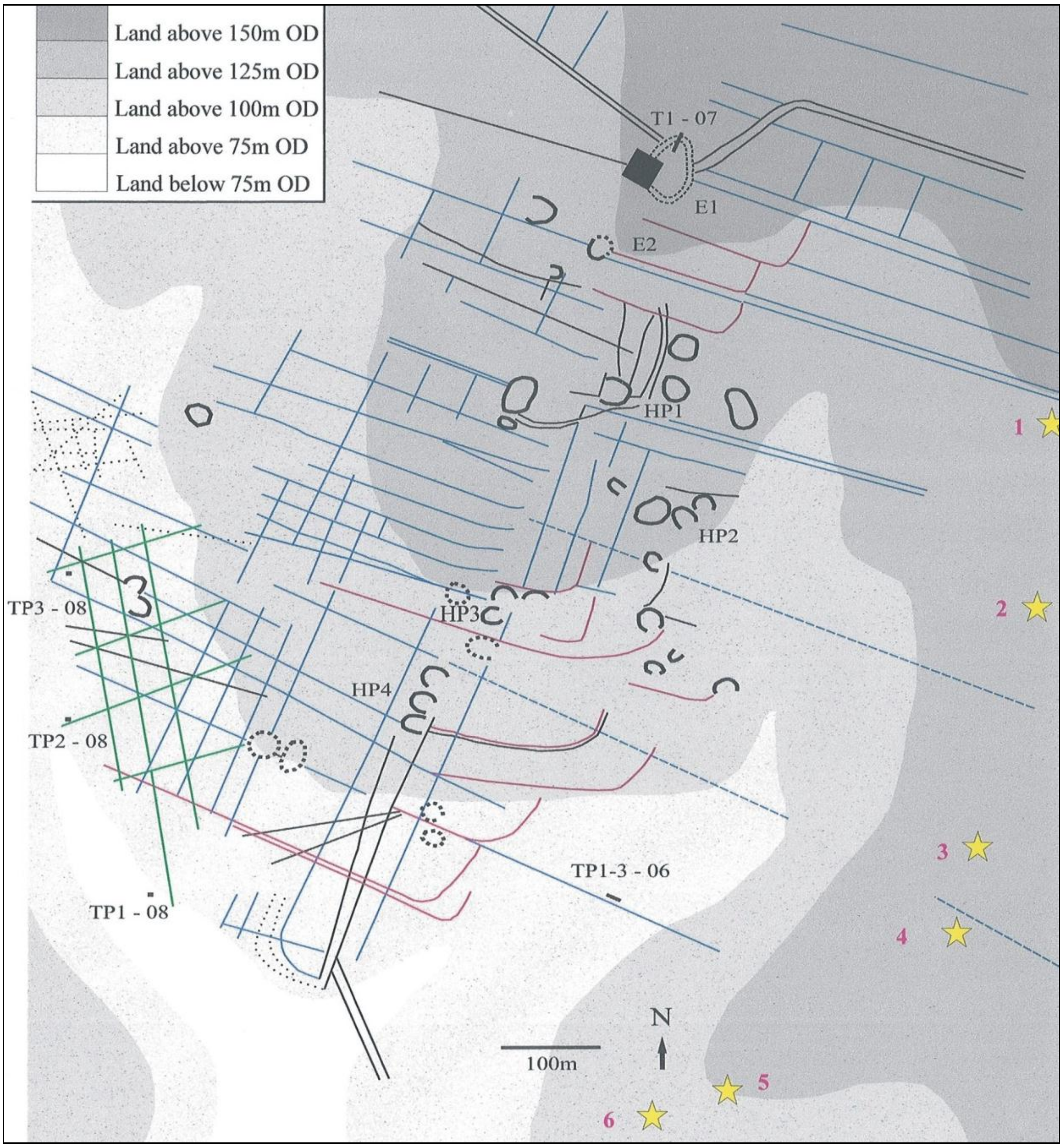


Fig. 8.43 Showing the alignment of the field system on the barrows, denoted by gold stars. The dotted blue lines indicate lynchets observed from the land above the eastern valley but not measured on the ground because the crop was too high for walking on. Drawn by J. English

Key____ Coaxial Field System
____ Looped Fields
____ Later Field System
____ Other Lynchets

There are two schools of thought on field system construction: Fleming (1994) believes they were built entirely in one brief timespan developed on the basis of pre-existing Neolithic territories, whereas Johnson (2005, 18) disagrees and believes they were built as needed. It is, of course, possible that the fields associated with Barrow 1 were built first and other sections were added later, contemporaneously with the building of each barrow.

In an effort to throw more light on this debate, each section of land was examined for similarities and differences. Supposed later features, such as the enclosures and possible burnt mounds, will be excluded from this discussion. This evaluation has all the usual caveats when trying to understand the phasing of a field system.

All the perceived lynchets dividing the land blocks run slightly at an angle to each other but run in straight lines across the spur and are picked up on the same alignment, even if there is a gap.

There are changes in alignment in the verticals running down the spur. These are plainly visible in Figure 8.31 where an attempt has been made to fill in gaps in the system. They mostly seem to occur across dividing lynchets between the bottom two land parcels. They are perhaps ephemeral.

Stronger evidence is that more realignment marked in red in Figure 8.43 has taken place in land divisions 3 and 4 than elsewhere, which might imply the division of an existing land holding. The balance of evidence suggests that the first three land blocks were built contemporaneously, aligned on the earlier barrows and that the fourth land division is the division between land parcel 3, which retains a slightly larger area than the others and 4. This division possibly happened at the same time as Barrow 4 was erected. Field re-alignment below the fourth land parcel might be evidence of another pre-existing land parcel based on either Barrow 5 or 6. This would also imply a long usage of the field system which would have been partly responsible for the amount of colluvium. Soil analysis of a sample from a lynchet indicates disturbance in the soil before the lynchet was formed (Crowther 2008), suggesting agricultural usage before the formation of the lynchets. The south-eastern side of the spur would have received more sun than the western facing slope and, as such, was possibly preferred by earlier agriculturalists. We do not know what crops were grown pre the formation of the lynchets (the 1900-1400 BC date range) for the commencement of the first field system. On the basis that emmer, possibly einkorn wheat and hulled barley were found in the later settlements (14^{th}-11^{th} centuries BC), any or all of these three are possibilities.

Emmer, according to Fowler (1983, 158-63), is the most dominant crop of early agriculturalists both L.B.A. and E.B.A.. Although Greis (2002, 11) describes the evidence used by Fowler as ‘limited and ambiguous’, emmer is ideally suited to upland slopes on light dry soils and does not like valley bottoms. However einkorn is also possible as it requires little care but crops late and has a lower yield than emmer (Reynolds 1979). It is, however, higher in fibre and protein than other wheat (Renfrew 1973). Barley is best suited to a long cool growing period, as in the western valley. It is also unknown precisely when in the Bronze Age it took over from emmer as the predominant crop. It is probably safe to assume that, since up to 57% of one of the Black Patch deposits was comprised of emmer, a considerable amount had been grown since agricultural slash and burn began on the site, most of which occurred on the south-eastern facing slope.

Land allotment

Allotting land to different groups in the community between neighbouring landholdings would probably involve decision making at a reasonably high local level, in which case, the division between Barrows 3 and 4 could have been the splitting of the landholding into two. This may have been the result of inheritance, or the addition of another power influence into the group. However this power influence was structured, it probably governed, in one guise or another from at least the erection of the Beaker Barrow 1 until the building of the settlements, as none of the divisional lynchets have hut platforms built across them. The lack of Beaker settlements has been discussed in full by Brück (1997), who suggests that the population was still nomadic at that time but would return to areas of land periodically.

The barrow might be the first sign of the appropriation of virgin land into a family or tribal holding. However, Hut platforms 1, 3 and 4 are built over non-divisional lynchets implying a later date for the settlements than the field system. Radiocarbon dates from some of the huts lead to interpretations of 1050 BC (Needham 1996, 135) and 14th-11th centuries BC (Hamilton 1997, 41). Both these interpretations would show the building of the hut platforms after the date of the building of the fourth barrow.

It is at this time, or slightly later, that the field system coloured green in Figure 8.43 in the western valley was probably introduced to grow barley.

8.9.5 Calorific and Labour Input/Output analysis at Black Patch

The period with inhabited settlement sites is the only one that can be studied with regard to yields, labour requirements, calorific requirements and land-usage as it is the only period where settlement numbers and land area can be postulated.

Land holdings 1, 2 and 4 are approximately 180m wide whilst 3 is slightly wider, being 200m. All are about 1000m in length (measured from the scarp slope in the west to the barrow line in the east) giving a holding size of 18-20 hectares.

The following two tables, 8.2 and 8.3, contain figures from two studies - one theoretical from Brongeurs (1972) reported in Bakels (1996) and one experimental from Reynolds (1981).

Table 8.2 Theoretical yields and numbers of people fed, required for ploughing and harvesting. After Brongeurs 1972

Rotation	**Area under cultivation**	**yield/ha in kg**	**Net Yield kg/ ha**	**Nos. Fed**	**Surplus in Kg after feeding 6**	**No. req. for sowing Ox pair/ pers**	**No. req. for Harvest**
None	18 ha	800	14400	68	13174	2pr/20p	18
Two year	9 ha	800	7200	34	5940	1pr/10p	9
Three year	6 ha	800	4800	22	3540	1pr/7p	6

Table 8.3 Experimental yields and theoretical numbers of people fed, required for ploughing and harvesting. After Reynolds 1981

Rotation	**Area under cultivation**	**Seed yield/ ha in kg**	**Net Yield kg/ ha**	**Nos. Fed**	**Surplus in kg. after feeding 6**	**No. req. for sowing Ox pair/ pers**	**No. req. for Harvest**
None/ Best year	18 ha 9 ha 6ha	2500	43866 21933 14622	206 103 68	42640 20707 13362	2/20p 1/10p 1/7p	18 9 6
None/ Average year	18 ha 9 ha 6ha	1800	31752 15876 10584	149 74 49	30526 14650 9358	2/20p 1/10p 1/7p	18 9 6
None/ Worst year	18 ha 9 ha 6ha	700	11466 5733 3822	54 27 13	10200 4467 2596	2/20p 1/10p 1/7p	18 9 6

The first table assumes a net yield of 800kg of grain per hectare and 80% of annual food intake taken as grain (210kg). It assumes that six producers need to be fed and gives the surplus grain in kg. It then takes figures from Halstead (1995, 13-14) assuming an ox driven ard can plough 0.3ha per day, whereas the area dug by hand is on average 0.03ha per person per day and that the sowing season lasts for 30 days.

The second table records actual yields from experimental farming giving best, average and worst yields for a period of eight years. These yields were attained by spade cultivation and drill seeding of emmer (*Tr. dicoccum*) without the addition of manure. In a separate experiment, Reynolds (1981, 108-110) found the addition of manure doubled his yield. The other figures are from Halstead (see above). The variation in yields, which Reynolds blames mostly on climate, is quite dramatic.

Halstead observes that tillage using an ard, based on historic and ethnographic observation, is between two and 15 times faster than manual cultivation.

In contrast, experimental harvesting using flint, copper or bronze sickles took between 0.02 and 0.05ha per person per day. Carbonised crop remains indicated possible harvesting by this method. Using 0.033 as a rate would bring the numbers required for hand sowing and reaping to virtually the same. This would mean that a work force of between six and eight could farm six hectares agriculturally annually, or 18 hectares on a three year rotation. It would also mean a single nuclear family of four could farm three hectares of arable crops each year.

Evidence presented in the crops section of this work pointed to a possible three yearly legume/fallow/cereal rotation. Drewett is of the opinion that Hut Platform 4 was inhabited by an extended family (six to eight persons) and the other hut platforms appear to be the same order of size.

Seed input from intensive (hoe) and extensive (ard) sowing regimes can differ by as much as a factor of two in that seed is drilled in the first method and broadcast in the second. Both regimes are recognizable at Black Patch, the first in the seed depositions associated with Hut Platforms 1 and 4 and the second with the separate field system in the western valley. However, given a minimum yield, of 4:1 for seeds harvested to planted would still produce a healthy surplus. Either of these methods would indicate excess production. All the excavated hut platforms at Black Patch have pits large enough to store not only the excess grain but also next year's crop. The evidence of manuring from Hut Platform 3 strengthens this argument for excess production. Obviously a two year rotation would provide 50% more grain on the basis of the Butser experiments. The range of the above data is likely to contain figures for yields that match those actually achieved in the past. The average unmanured yield from Butser could provide 80% of the daily food intake of 50 people if applied to Black Patch. Two hundred people could be fed if all four units, all hut platform holdings, were in production at one time. This does not take into account the calorific intake of plants weeded from the cereal crops, wild food and seafood resources all recorded on the site.

The other element in the farming strategy is livestock. There is evidence of cattle, sheep and pigs at Black Patch. The age range of bones found indicates they were producing animals for both primary and secondary products. Assuming the rate of 70 litres of milk per cow per day (Mercer 1981, 234) and assuming 50% of this figure as a daily rate, three cows would provide the complete calorific intake of ten people. Three cows and calves could easily be housed in Hut B Hut Platform 3 over winter with the byre needing to be cleared out once every two months during their period of housing. The contents of the byre and six months outside grazing for these six animals, would provide one quarter of the manure needed to fertilize six ha at a rate of 12 tonnes per hectare, the recommended rate (McConnell 1885, 78). Both Hut Platforms 3 (one) and 4 (two) contain ponds large enough for the immediate needs of the animals. There are several large features near the site that could also have been ponds formed in the clay-with-flints deposits. Some ponds are still evident today such as Jerry’s pond close to the Black Patch site.

The first edition O.S. map (Figure 8.44) shows two of these features that could have been Bronze Age ponds, particularly as the clay-with-flint cover would have been greater in the Bronze Age. The lower is the feature identified in both the field walking and survey as containing burnt flint. The second is just behind an 18th century farmhouse called Pinfold, where much architectural masonry is still in evidence. It is unlikely that a farmhouse would have been built without a water supply. A feature called Jerry’s pond that still holds water exists further up the slope.

The provision of calves requires a bull. Provisioning for a bull in this area would be uneconomical even if all the holdings were in production at the same time. It is more likely to have been kept off site as part of a much larger nomadic herd.

Added to this economy are sheep. The dental analysis from Black Patch 2005-6 showed a peak for slaughter at 20 months Not only is this the optimum age for meat production but it is the age at which male sheep which have been used for wool production start to be slaughtered (Serjeantson 2007, 86). She also states that sheep dung is of higher quality than cows, suggesting that the most efficient way to manure fields with sheep is to herd them onto more distant pastures during the day and to bring them back into the fields at night, as the quality of the dung is enhanced by the nutrients eaten elsewhere (Serjeantson 2007, 83). There is plenty of pasture close to the settlement site and the scarp slopes.

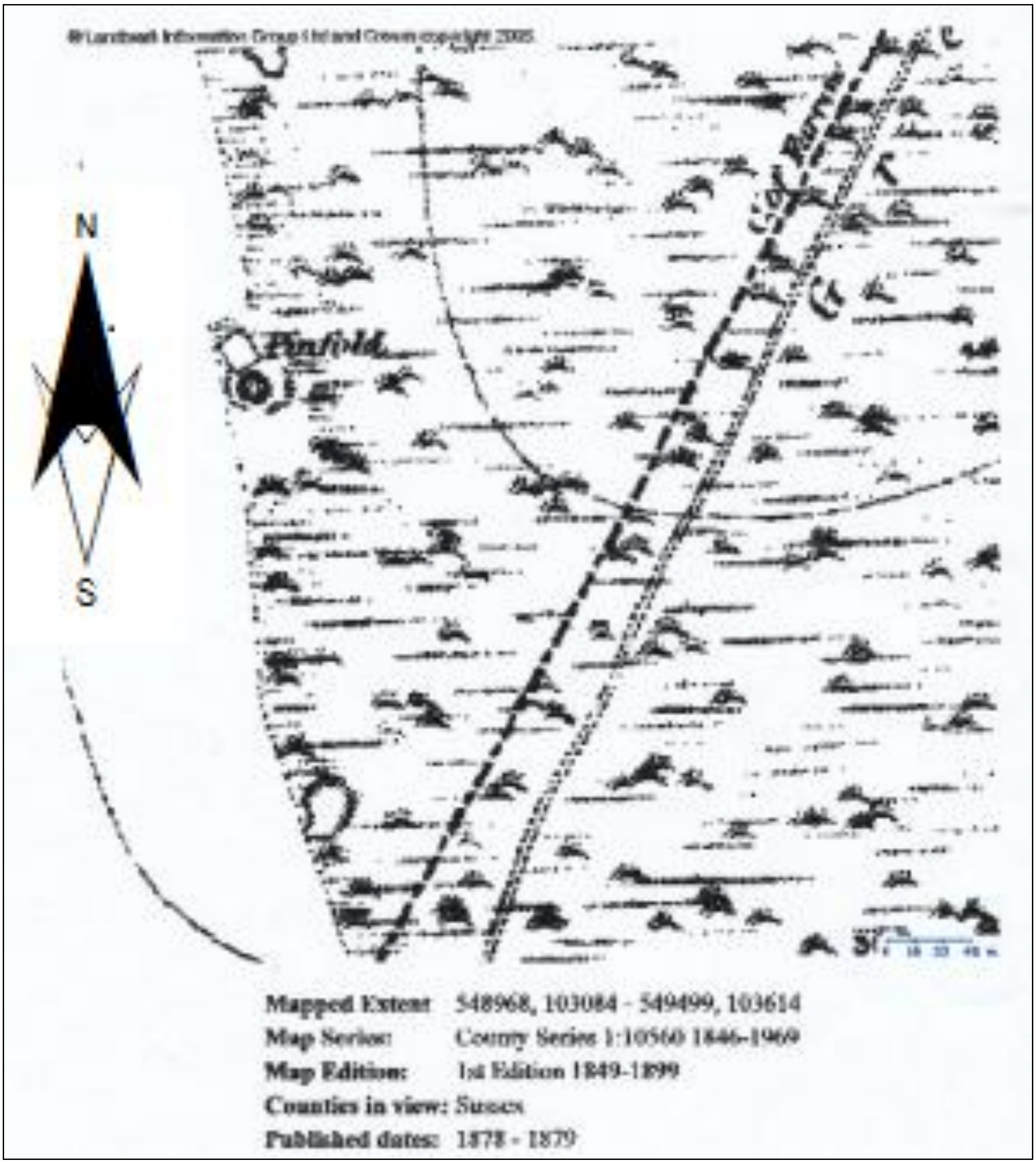


Fig. 8.44 O.S. Map, First Edition, 1878-9

Whilst the above model is not the only possible one, given the size of the holdings and the accommodation still visible on them, excess production of cereal seems probable even if you divide the holding into two parts of 9ha. There is obviously a power structure in place to allocate land in what appears to be a harmonious manner. The Early Middle Bronze Age transition is described by Brück (1997, 11) ‘as a major turning point in the prehistory of Southern Britain'. Archaeologists like Hodder (1990); Thomas (1991); and Barratt (1994) have placed the change to an economic pattern of settlement and agriculture to this period. There were changes in the landscape from one dominated by henges, ring ditches and barrows to one dominated by settlements and field systems. Deverel-Rimbury pottery replaced Beakers, food vessels and collared urns and flat axes and daggers were replaced by palstaves and rapiers (Brück 1997, 17-18). Her study of the differences between Early Bronze Age and Middle Bronze Age society defines the first as 'having fluid social groups and negotiable identities' and the second having 'fixed groups and fixed identities' (Brück 1997, 221-3). Life becomes attached to the settlement rather than group meeting places (henges).

It is not clear what percentage of society became sedentary at this time. Commodities such as shellfish and non-local stone had to be acquired and transported. There are only two currently identified definite Later Bronze Age sites on this block of Downland, Black Patch and Itford Hill, whose joint accommodation would serve a maximum of 80 people, including children, if all the huts were in use at one time. For these reasons the idea of self-sufficient and independent farms of four-five people, whilst still feasible, is unlikely, given that a large percentage of individuals were probably not sedentary (Pryor 1998) and given the capacity for excess production. One possibility is that lands that were once farmed intermittently were settled and farmed by members of the same Late Neolithic/Early Bronze Age group with the emphasis on excess production to feed non-sedentary members of the group. The evidence for Neolithic and Early Bronze Age settlement on the Downs is generally found in monumental buildings and lithic spreads. In the immediate vicinity of Black Patch are three Neolithic long barrows, Alfriston, Windover Hill and Long Burgh (Drewett 1999, 17). There are many round barrows dated to the Early Bronze Age that have already been discussed. Mesolithic, Neolithic and Early Bronze Age lithics have been found in the immediate vicinity of Black Patch and a large amount of lithics have been found a kilometre from Black Patch (Gardiner 1988, 19).

This period of between 50 and 200 years (Chapter 5.3.6 Discusion) gives the site an age of 50 to 200 years, if all land divisions were in use at once, to 250 to 1250 years if each holding was inhabited separately. This last figure, whilst possible, appears to be too high so it is probable there was a degree of contemporaneity in hut usage. If the original granting of land had been familial or intra-kin group, so that although being part of the same group each holding had a degree of autonomy, it is possible that this period was at least 100 years and probably longer than one generation.

Final Developments

Enclosures 1 and 2 are built over existing double lynchets (Figure 8.41) Enclosure 2 is built over the boundary between land blocks 1 and 2. Excavation has shown that Enclosure 1 was built over the lynchet leaving it in a north-westerly direction. The lynchet coming into the enclosure from the north-east direction appears to have been turned towards Enclosure 1, giving it control over movement in an east-west direction. The fact that one divisional lynchet has been built on and the positioning of Enclosure 1 over two pre-existing lynchets implies that this was after the building of the hut platforms and the building of enclosures was probably the penultimate phase of occupation during the Bronze Age. The only dating evidence found at present in the enclosures is Deverel-Rimbury pottery.

The only other large constructions found overlying land boundaries are the two features that might be associated with a burnt mound and/or pond below Hut Platform 4, two further features on the same alignment shown to be bomb craters on aerial photographs and a small feature lying between blocks 2 and 3, again identified as a bomb crater.

There is no way of dating the two enclosures 1 and 2 at the top of the ridge, other than by the presence of Deverel-Rimbury pottery. Both are positioned over lynchets, the northern one in such a position that one lynchet has been diverted to go through it. Enclosure 1 certainly contains buildings on its southern side and was constructed with a ditch and bank. It also has a good visual position although, because of the topography of the slope, it is not intervisible with the bottom of the ridge to the south. However it is in a position to see movement into or out of the field system from the North. If Drewett (1982) is correct in his idea that Hut Platform 4 was abandoned in a hurry and it was the only excavated Hut Platform that contained bronze, the bronze could possibly be a closing deposition for either this platform or the whole site. This enclosure might be a logical next step, either by the existing inhabitants or by those who caused the abandonment of the Hut Platforms. Its construction also seems to be more pastoral in use, being partly a stock enclosure (Drewett 1982). The excavation of Enclosure 1 revealed tree throws on both sides of the bank in what appears to be a linear pattern indicating the use of hedges.

The field system to the south of the site which is orientated differently to the rest of the system, may also be of this period. It encloses what appears to be a hut platform which, whilst superimposes the rectilinear system, does not impinge itself on this system. It may have been built to take advantage of the quality of the soil compared to the rest of the area which may then have been of depleted depth and fertility. The last phase would appear to be the sporadic re-use of depressions caused by the former hut platforms as indicated by the spread of Post-Deverel-Rimbury pottery in the uppermost layers of these areas. These were probably used by nomadic herdsmen grazing the Downs. The block containing Black Patch and Itford Hill appears to have been annexed from the low ground and the river system by a series of cross ridge dykes.

One further point to mention is the different condition of the colluvium in the two valley bottoms. There are several possibilities for this. Firstly the south-east facing slope was favoured by early agriculturalists as having better growing conditions. This would be left open over the winter giving rise to greater colluviation. Crowther (2008) suggests the presence of chalk in the soil when the rectilinear lynchets were formed. Secondly as it is assumed that loess originally blew in from the east, the eastern facing scarp slope would have caught and deposited this to a greater depth. However the fact that a layer of loess at least a metre thick remains on the site indicates that agricultural practices were not abandoned because of soil erosion.

Finally, the size of the eastern valley, its greater sloping valley bottom and the fact that both sides were cultivated has meant there was a greater amount of colluvium and erosion and hence flint has not only moved downslope but also down valley.

8.10 Phenomenological Survey

8.10.1 Survey

The lack of emotion in phenomenological studies has been argued elsewhere in this paper. Both quantifiable and non quantifiable (emotional) input have been considered. Unfortunately quantifiable readings about sound, vision etc were made untenable by the nature of the site. Wind direction and speed were the major reasons for this. They seemed to vary considerably. Sound could travel extremely clearly from outside of the valley but a change in wind direction would alter the direction from which it was audible. On other occasions sound hardly travelled at all meaning all that was audible was from the immediate vicinity. The site was frequently affected by mist occasionally descending so much as to make vision limited to a metre. However on these occasions sound seemed to travel uniformly in all directions even though identification of the direction of the sound was greatly impaired. Even on a clear day site intra visibility was poor due to its' topography. It seemed site safety aspects, for example overseeing children from a distance or an attack on the site, were not very relevant to the inhabitants of Black Patch.

In an effort to acquire realistic responses to questions based on feelings rather than perceived knowledge, a questionnaire was devised to contain both questions that addressed feelings and questions that required facts. These were mixed in an attempt to get honest answers to questions about feelings. There were seven questions which were given to every volunteer who had spent at least a week on site.

Questionnaire.

1) What were your initial thoughts when you arrived at the site?

2) Did the location of the site make you feel comfortable or uncomfortable?

3) Did the site give you a feeling of being enclosed or exposed?

4) Why do you think the Bronze Age people settled here?

5) Who in the family/tribe/group, do you think, decided on the location and why?

6) What features in the landscape are most significant to you when you are at the site?

7) What do you notice most when looking around you from the site?

Replies and analysis

Question 1 was factual and most answers related to archaeological matters.

Questions 2 and 3 are about feelings and although they are separate, their answers were related so they will be dealt with together. 25 of the 33 forms received indicated that the recipients felt comfortable yet also exposed. The percentage of correspondents answering in this manner was identical for men and women. Four people felt comfortable and unexposed, two uncomfortable and exposed and two neither.

Questions 4 and 5 were factual.

Questions 6 and 7 are really the same question. Both were asked so that at least one answer would relate to feelings. 25 people mentioned the sea, ten the downland ridges, eight the general downland views, five the barrows, four the wind and three a patch of scrub located below the site.

8.10.2 Conclusion

The site was clearly not chosen for its defensibility given the lack of intra-site visibility. From the questionnaire, the most obvious result is the large number of people who felt comfortable at the site but also exposed. This suggests, perhaps, that openness of surroundings and closeness to the elements is basic to human beings and would perhaps have been important in selecting settlement sites in the past, although only four noticed the wind. The sea was the most obvious feature which would have been visible in the Bronze Age. However, no-one mentioned the sky.

Chapter 9. Synthesis

9.1 Introduction

This chapter brings together the evidence from the last four chapters to discuss the three main research questions.

1) Why were these areas chosen for settlement?

2) What caused their abandonment?

3) What can we learn about the life of the people associated with the settlements?

Potential answers to these questions are inevitably intertwined. The findings and possible implications from the site and settlement area will be examined first then the chapters on artefacts and ecofacts. This will be followed by a discussion and a conclusion of possible answers.

9.2 Site and settlement area

Chapter 8 suggested a possible phased chronology of human activity on the site. This started with the occurrence of Mesolithic artefacts, then came slash and burn agriculture, followed by permanent agriculture, developing into a field system, probably closely followed by unenclosed and enclosed settlements and lastly a later field system. The settlement is close to a Neolithic site and two Neolithic barrows. It is surrounded by Bronze Age barrows and close to a cross ridge dyke.

Dating evidence is sparse; there are a few disputed radiocarbon dates, otherwise dating is by pottery, metal and building analysis. None of this is fine grained enough to be precise about the dates of the construction of barrows, fields and enclosed and unenclosed settlements in the area.

The area survey produced information on the phasing of banks, which when added to the existing data, made an attempt at a credible phased chronology possible. The survey also showed that there were at least another eight potential hut sites, none of which overlay the co-axial field system. Each block of land aligned on a barrow has potentially between four and seven hut platforms, enhancing the impression that the settlements were at least partly contemporaneous. Most of these sites are on or near the crest of the spur and built in close proximity to the others in their land block.

The alignment of the block of land on the barrows on top of the ridge is undeniable but lacks explanation. The alignment could be accidental but the alignment of celtic field systems on existing monuments has been observed elsewhere. This alignment is usually of the lynchets or field boundaries of the system onto the monument, not around it. The author has suggested that at Black Patch this is because each barrow belongs to a particular kin-group or lineage and they wished each barrow to be contained within the relevant block of land.

Many prehistorians are of the opinion that the association of kin-based clans with certain geographical locations in Southern England was established at the latest by the Neolithic (Renfrew 1976; Flemming 1984; 2008; Barrett 1990; 1994; Bradley 1991; Earle 1991; 2000; 2002; Kristianson 1991). Wickstead (2008, 93) has recently argued against this model stating 'Kinship and identity appear to be less and less about roots and more about processes of becoming or making persons'. She argues land tenure is more likely to be part of an exchange culture where ties to other groups are formed. She does however accept that 'barrows and cairns are the first steps towards land division' (*ibid* 115).

The topography of Black Patch as a spur surrounded by a natural amphitheatre may have had cosmological interpretations. Intra-site visibility is varied. The sun revolves around the area, rising and setting behind the two high ridges on either side. There are good views of the spur from each of these ridges whereas from the valley bottoms, activities on the spur would be invisible. It is possible that this formed a sacred or ceremonial landscape and as such played the part of a henge. There is no proof of this but no henges have been found in Sussex to date (with the exception of the hengiform site at Lavant).

Drewett believes that the two Neolithic barrows close to Black Patch, Long Burgh and the Alfriston oval barrow, were situated on the edge of a Neolithic territory (Drewett 1975, 139) and built by 'groups of people probably related, perhaps by kinship' (Drewett 2003, 45).

Based on anthropological and ethno-archaeological studies, Johnson and Earle (2000) believe the driver of the evolution of human societies is population growth. This is brought about by new sources of food made available by new technologies, for example agriculture and gardening. These are usually more secure than hunter-gathering and they also increase fertility in females due to consistency in nutrition compared to the seasonality of hunter-gathering. They split the economy into two separate areas. The first is the subsistence economy and is organised at a family level to meet the needs of food, clothing, housing, defence and procurement of that family.

The second, the political economy, is the interaction with other groups to solve problems outside of the subsistence economy. This could be to gain access to items not provided by the subsistence economy or to form alliances against potential acts of aggression. This usually requires using surpluses from the subsistence economy. Control and use of these surpluses leads eventually to an elite who compete with other elites requiring intensification of production. Providing the subsistence economy can stand the increase required, evolution of societies continues from family group to local group to big man to chiefdom.

The labour required to build a Neolithic long barrow would require an organised labour force, as would a field system; the planting and training of hedges might take several years. The Neolithic barrows and the field system would require possibly a local group or groups co-operating. The manpower required to build a round barrow would be considerably less and would possibly only need a nuclear family. Johnson and Earle (2000, 43-44) would suggest this is a political oscillation from what they term as local group to ‘the family level group’ and then back to ‘local group’. Family level societies are typified as having a low population, a technology consisting of personal tools and a lack of political integration, stratification and warfare. Social organisation is based on family lines. Religion is restricted to shamanism and magic. The local group is a more advanced political model. It consists of a larger population, a technology that consists not only of personal tools but individually owned and publicly used larger items of technology such as boats, animal corrals and fish weirs.

Warfare is common. Political integration is strong, backed by a combination of leadership and ceremony and linkage to other social groups. Stratification is a basis for political control with constant internal rivalries. The scale of leadership varies from headmen to Big Men. Ceremonies relating to ancestral spirits are common as are inter group ceremonies relating to marriage, trade and creating allies. Ceremonies are often based on annual or multi-year schedules (*ibid* 124-6).

‘Institutionally, the formation of clans and lineages distinguishes the organisation of the local group from the less formalised organisation of the family level’ (*ibid* 131). They add that most clans and lineages in local groups are corporate usually owning land contra Wickstead (see above). Specific rights to land and assistance are given to members in return for support in ceremonial duties and warfare.

It is impossible to say whether the co-axial field system at Black Patch was built as a marker or was due to agricultural intensification; however it is probable that permanent site settlement was a result of intensification and that, if so, it happened on each part of the field system at about the same time. The limitation of space given to each hut would leave a maximum area for agricultural use and the continued occupancy of each hut platform would imply a period of a hundred years or more to the next phase of settlement, the enclosures. Hut Platform 4 is the only one on which bronze was found. Johnson and Earle would imply this was the ‘Big Man’s’ hut platform on the basis of this conspicuous wealth which was probably part of the political economy. Furthermore the pits containing burnt grain on this hut platform could be indicative of the storage of the excess from the subsistence economy.

The suggested abandonment of the hut platforms for defensive enclosures could mean the area of the settlement was being raided by neighbouring tribes. There is no evidence on the Downland block of land between the Rivers Cuckmere and Ouse for large extant field systems. Recent survey by English (pers. comm.) has shown a large field system at Fore Down near Jevington, east of the Cuckmere. Several large field systems at Hidole Hill, Southese Hill and Plumpton were recorded by Holleyman (1935) west of the Cuckmere. The lack of evidence for large field systems in the Black Patch area could be the result of the topography of the area, eradication by modern farming techniques or indicate that Later Bronze Age territoriality was smaller between the Cuckmere and the Ouse. The latter case would indicate that invasion from either east or west was possible. Figures 9.1 and 9.2 are contour maps showing the topography of the eastern Sussex Downs.

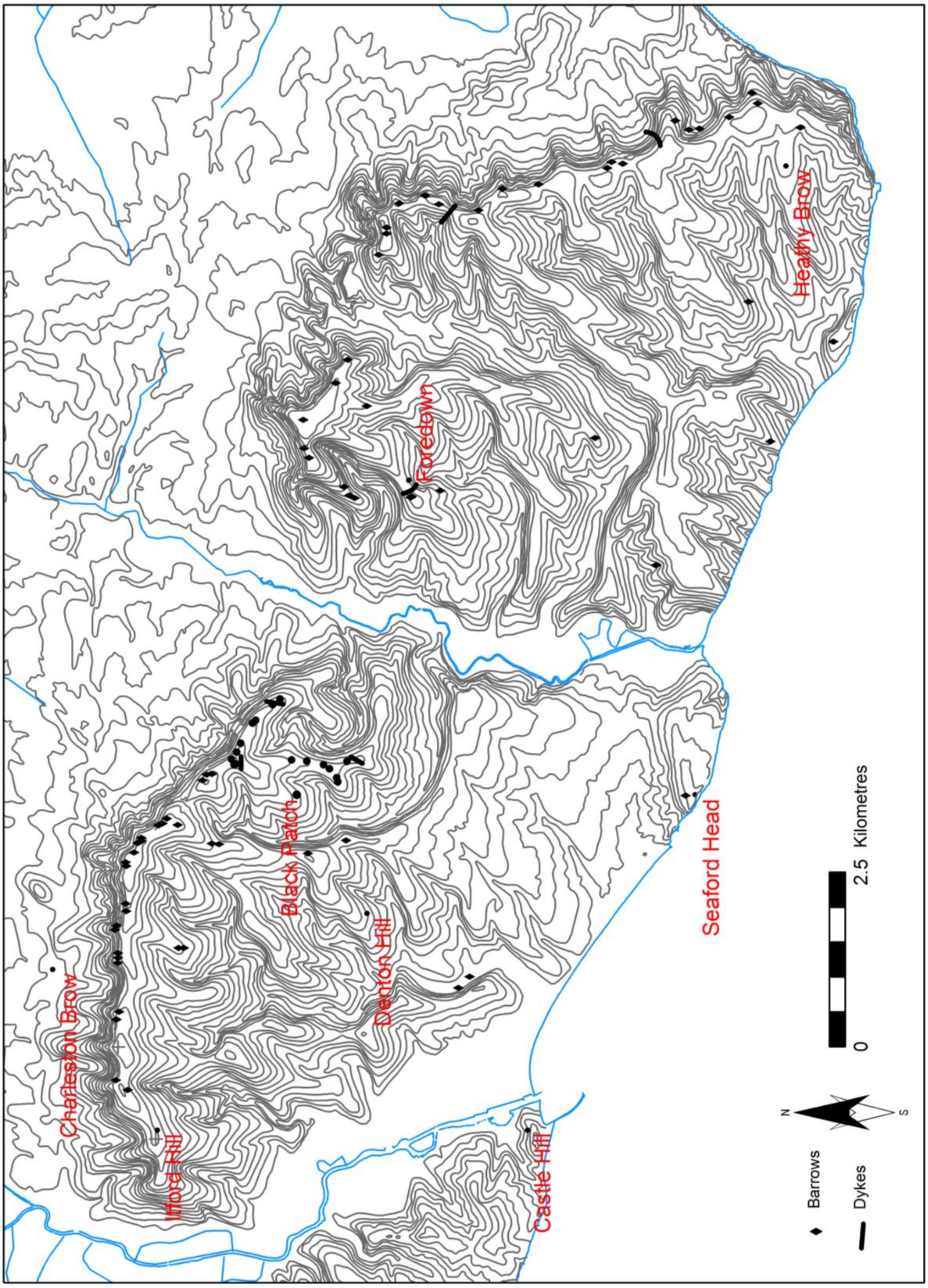


Fig. 9.1 Contour map of Black Patch and Fore Down areas

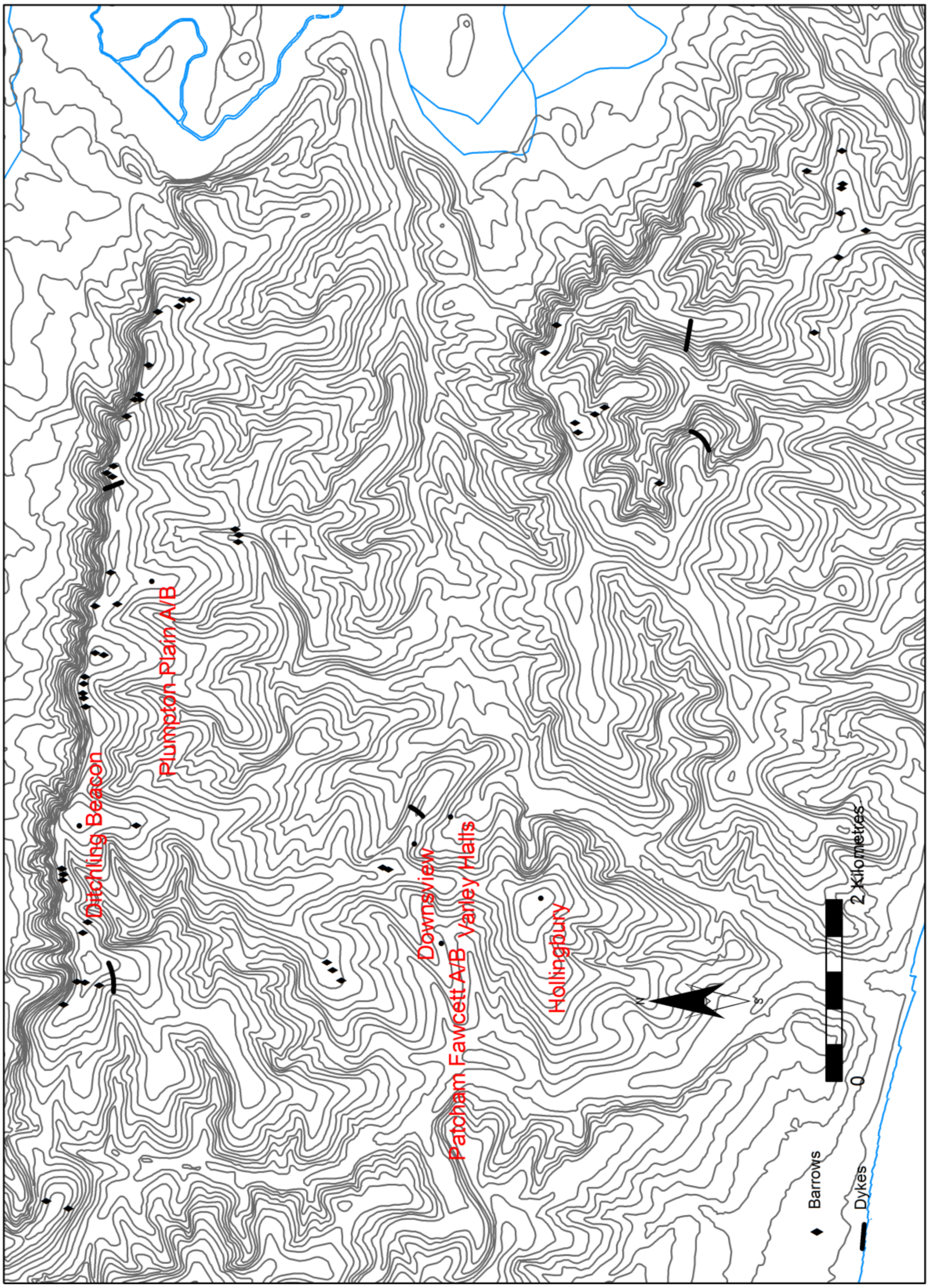


Fig. 9.2 Contour map of area around Downsview

The area may possibly have been a buffer zone between stronger powers and eventually one acted by taking control of the group inhabiting Black Patch. Cross ridge dykes were erected. Their positioning surrounding the site combined with the scarp slope, seems to bar entry and exit (Figure 9.3).

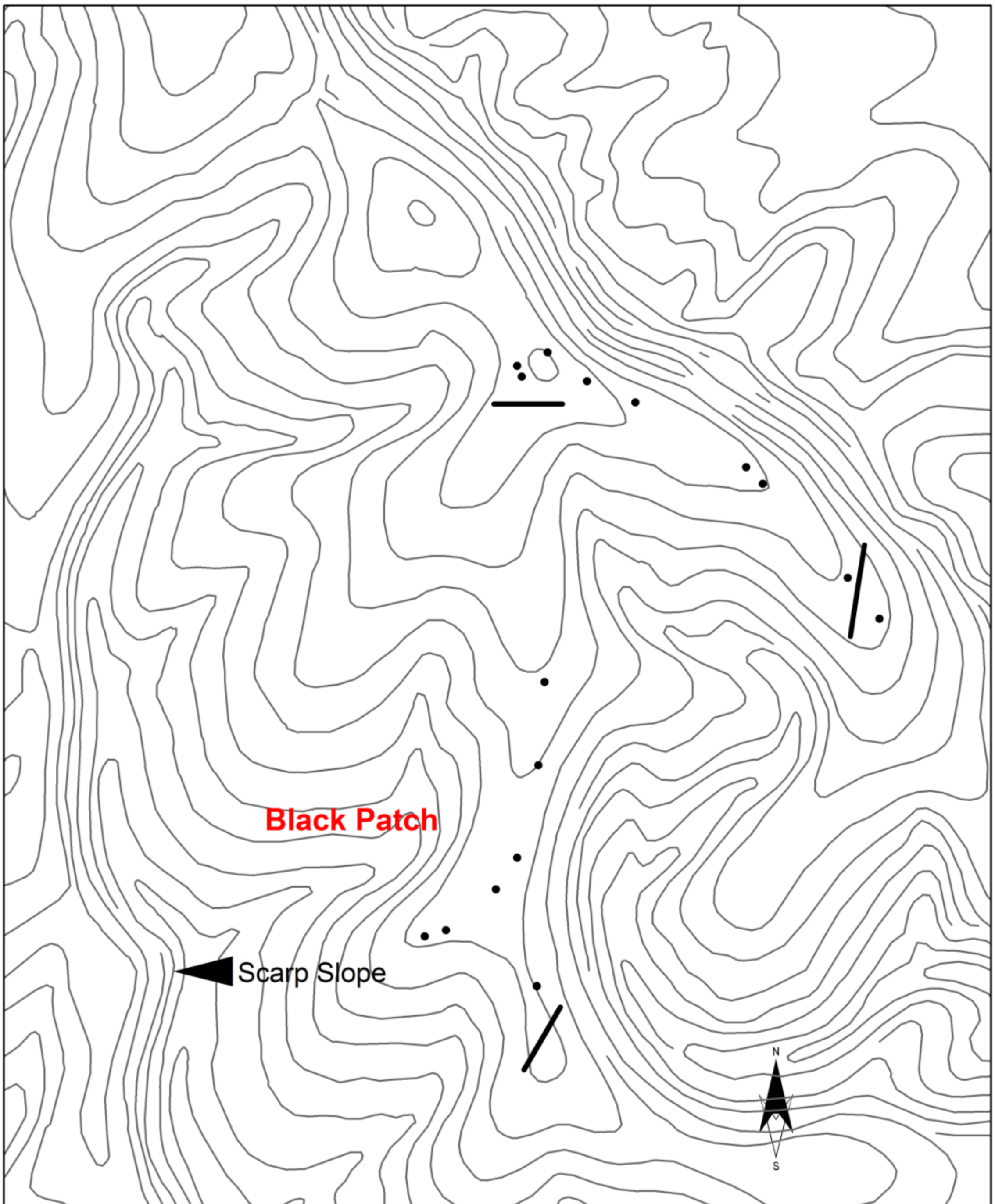


Fig. 9.3 Contour map of Black Patch showing barrows, dykes and scarp slope

It is possible that the inhabitants were relocated. The settlement and its surrounding area went out of use. The small amounts of Post-Deverel-Rimbury pottery being found were close to the surface in hollows, possibly implying later use by itinerant herders.

9.3 Artefacts

9.3.1 Introduction

Each artefact class will now be examined individually.

9.3.2 Flint

The use of flint across the site was still very much in evidence at the site. Flint had been used for tools, building, lighting and structured deposition. The assemblage is typical of a Later Bronze Age settlement site and would have been used for processing hide and other animal products and other organic materials. The range in size of various tools indicates a wide breadth of usage. The association of horned scrapers with Hellingly, ten kilometres to the North, shows either incursions into the low Weald along the River Cuckmere or relationships with the people living there.

The use of knapped flint in building shows the ability to adapt older technologies to solve new problems. The apparent spatial discipline of knapping areas on site is surely due to the requirement to keep large areas free from sharp flint debris.

The large amount of struck flint found not only during excavation but also in field-walking is probably indicative of the longevity of the site and the abundance of flint nodules in the area is still noticeable.

9.3.3 Fire-cracked Flint

The use of burnt stone, fire-cracked flint indicative of technology for cooking, heating and lighting was identified by the structure, appearance, contents and the magnetic susceptibility readings of certain features or areas according to ethnographic comparison. These hearths would appear to have been used for cooking, heating and lighting. Two of these hearths were centrally placed. The utilitarian reasoning behind this placement and ethnographic comparisons in colder areas was explored. This called into question the dualistic cosmological ideas of circular huts being divided in half. The axis of the division of the house is east-west with the doorway facing east (sunrise). Activities on the left of the hut (as you face it) have been said to represent living and life and on the other side of the division, sleeping and death. Ethnographic evidence indicates a centrally placed hearth is often believed to be the centre of the universe leading to a cosmology based around this idea.

The association of fire-cracked flint with pottery, bone and a Neolithic knife is approximated on many sites and is possibly a closing or funeral deposition. The possible existence of a burnt mound just to the south of the site, whatever it was for, would probably have enhanced the prestige of the site as many other sites do not appear to have one.

The large amount of fire-cracked flint found in the top-soil may just be due to post depositional factors but it could also have been the result of deliberate curation for future use by later nomadic herders as a claim on ownership or for protection.

9.3.4 Stone

The stone assemblage found at Black Patch is very typical of Later Bronze Age settlement sites. Sarsen, various types of sandstone, calcite and quartzite are all present, probably as a result of gift exchange or trading. Horsham stone is missing. It appears to be distributed towards the west of the county. However Mayen lava from the Eiffel district in Germany is present, probably as a result of gift exchange.

9.3.5 Pottery

The pottery assemblage at Black Patch is also similar to all other Middle Bronze Age settlement sites in the region. However most of it occurs in the layers above the flint layer in Hut A. It is fairly unabraided and mostly found lying on its side, indicative of lack of movement and trampling. Either it was left where it was dropped or dumped soon after it was broken. The rest of the identifiable pottery was found in pits or postholes again in an unabraided state finding its final position of deposition soon after breakage possibly as a result of cleaning out of the structure. The thickness of the pottery on Hut Platform 3 is slightly less than on Hut Platform 4 indicating independent potters on each platform.

9.3.6 Loom weights

The loom weights found on Hut Platforms 3 and 4 differed in that those on Hut Platform 3 had incised decoration whilst those on Hut Platform 4 had no decoration. This may imply that they were made by different people, possibly showing a degree of independence between hut platforms, although loom weight making would have been an occasional occupation mostly for replacement. The Hut Platform 3 decoration is very rare.

9.4 Ecofacts

9.4.1 Crops

The major crops found at Black Patch are barley and emmer wheat probably grown on the different parts of the site suited to their needs. There is also evidence of 'celtic beans' making the possibility of crop rotation a reasonable option. A three year rotation of grain, beans and fallow is also a possibility but there is not enough evidence to be specific. There is however enough evidence to suggest there was over-production for the needs of a small family group. The crops are far cleaner of weeds than they need be for every day use, implying the excess is being passed on.

The depositions of burnt grain, in pits large enough to store next year's seed crop, would appear to be depositional as the seed seems to have been deliberately burnt either as a closing deposit for a hut on the death of its resident, or as an offering for future fertility.

The time taken to effect the deposition would indicate it was premeditated and not the reaction of people leaving in a hurry.

9.4.2 Other Seeds

Many other types of seed were found at Black Patch. No doubt some are accidental transfers but many will have been used either for medicinal, fodder or craft purposes.

Table 9.1 is a possible medical kit for use in the Bronze Age consisting of seeds found at Black Patch.

At least another five plant varieties found at Black Patch provide fodder for animals or food supplements for humans and another two can be used to make dyes.

9.4.3 Bones

Black Patch bone assemblages from both excavations were very small. What was found implied sheep and cattle production for primary and secondary purposes as well as pig production. Food supplies were being supplemented by wild game. Some animals at least were being housed on site, producing dung.

Table 9.1 Hypothetical medical kit for Black Patch

Name	Uses.
Brassica nigra	Antidote for poisons
Cerastium	Anti-inflammatory
Atriplex hastate/patula	Headaches
Rubus fructicosus	Wounds and fevers
Potentilla	Treatment for cuts and wounds
Polygonium aviculare	Cools inflammation
P. convolvulus	Laxative
Rumex	Detoxifier. Breathing problems
Urtica dioica	Breast milk production
G. aperine	Burns
Tripleurosermum maritimum ssp *Indorum*	Pain killer
Prunus spinosa	Digestion

9.4.4 Marine Molluscs

Marine molluscs were found at Black Patch and would have added variety to diet. They are obviously a maritime resource, possibly received as a gift, or more likely as a trade item.

9.5 Discussion

Why did they come?

As can be seen from the Mesolithic artefacts found at Black Patch, humans have moved through the area since that period. Perhaps they hunted herds of wild animals and were looking for flint readily available in the area, or other resources specific to the Downs. The earliest environmental work done in the immediate area was at Alfriston Long Barrow and at Bishopstone, both of which postulated cleared areas of open grassland on the Downs in the Neolithic on the basis of molluscan evidence (Thomas 1975; O'Connor 1977). Access to the valleys from the ridge now known as the South Downs Way would have been easy and there are plenty of areas into which game could have been driven. The topography of the site felt protective to those answering the phenomenological survey. The relevance of their feelings is however debatable.

The underlying soil contained large amounts of loess, an Aeolian deposit blown in from the east at the end of the last Ice Age. Loess is very fertile but subject to erosion.

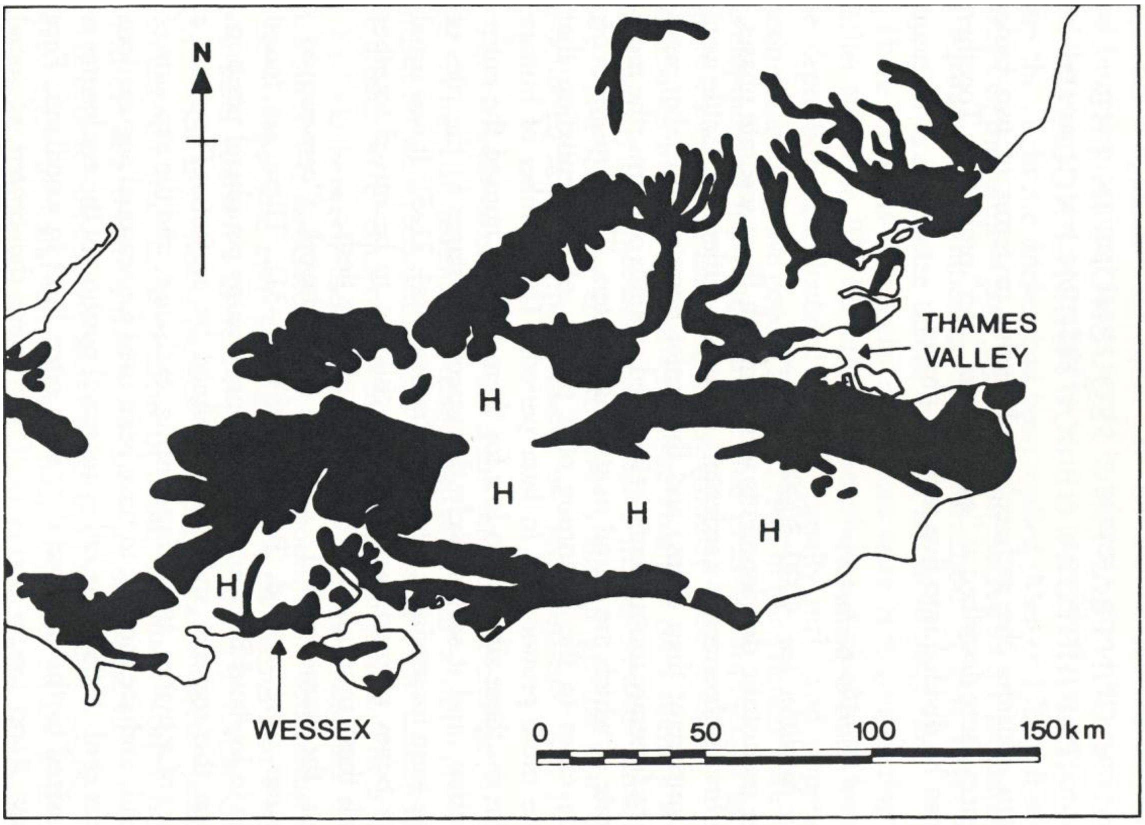


Fig. 9.4 Distribution of loess in Central Southern England. After Catt 1978 taken from Bradley 1991, 49

The distribution of loess (Figure 9.4) covers the Black Patch area and the topography of the spur and two scarp slopes, particularly the steep western slope, would indicate a high level of deposition of this Aeolian material being blown in from the east. This is also shown by the amounts of loess found in the valley bottom colluvium and the remains of undisturbed loess in the western valley. This type of soil would have been familiar to the incoming Beaker people as there are many depositions of loess on the continent (Bogaard 2004; Bakels 2009).

By the time of the arrival of the Beaker culture, the area would have had a long history of territorial use and time would probably have bestowed on the Long Barrows and other Neolithic sites ancestral memories. At this time, land ownership probably became more important with the building of barrows.

The Black Patch area has a lot of practical attractions. Good access, topography suited to hunting and farming, fertile and easily worked soil and a ready supply of flint.

The alignment of the spur and scarp slopes for calendar, cosmological and possibly other ceremonial uses adds to its attractions. The longevity of the site gives status, by way of real or perceived ancestral ties, to those who lived in and those who controlled the area.

What can we learn about the life of the people associated with the settlements?

The construction of Neolithic long barrows requires manpower and organisation as do field systems and to a lesser extent round barrows.

Although larger than its Sussex counterparts, West Kennet Long Barrow took an estimated 15,700 man hours to build with an estimated work force of 100 whereas Fussell's Lodge Long Barrow, approximately the same size as those found in the vicinity of Black Patch, required an estimated work force of between 32 and 40 and took 4870 man hours to build (Statin 1982, 155). Given an eight to ten hour working day, this would probably require between 15 and 20 days work for an organised group of this size. The size of this workforce would need a group of between 80 and 100 individuals, including other adults and children to provide it.

It would appear to be a 'Local Group' who built the Neolithic barrows at Black Patch formed of several family or kin groups as defined by Johnson and Earle (2000).

This group labour input usually has to be paid for. This can be in the form of feasting, protection, strategy or provision or division of food in bad times or the allotment of land. Not all of the criteria for the definition of social groups are evident in the Black Patch area at this time. There are no signs of warfare or intra group exchange. These would be very hard to find in the archaeological record. However the female corpse buried in the Alfriston Oval Barrow (Drewett 1975) might suggest the diminution in the female role was not yet evident.

Applying Johnson and Earle's anthropological model (Johnson and Earle 2000), local groups were usually under the leadership of an individual, possibly the oldest or wisest head of the various sub-groups. However they still spent the majority of their time with family level concerns. The Neolithic barrow builders of Black Patch worked on small agricultural plots and had organised access to grazing land and other resources, probably designated to the family by the group leader. They also had group protection against small acts of attrition, for example stock raids, inter group relationships being conducted by the head of the group, who would also be in charge of religious ceremony with great emphasis placed on kinship and territoriality. He could also have access and control over the prestige-goods economy and solo access to other groups (Friedman and Rowlands 1977).

Family groups would have been locally mobile, travelling between resources adding crop cultivation to traditional hunter gatherer subsistence methods. Failure by the headman usually meant he was replaced by another group member.

Whether or not the above model is totally applicable by the time Beaker culture arrived in the second half of the second millennium BC, the ideas of organised labour and probably territoriality were established (Drewett 1978; 1988; 2003).

Archaeologists are still not sure in what form the Beaker culture arrived in Britain.

Recent ideas have linked the spread of the culture to the adoption of the use of metals from central Europe to the north west (Brodie 1997; Fitzpatrick 2009). Fitzpatrick cites the 'Amesbury Archer', the oldest Beaker burial known to date, as being an example of what Brodie describes as 'Cultural Diffusion: The Movement of Knowledge' (Brodie 1997, 306). The 'Archer' brings with him knowledge of metals and metal working to the Amesbury area. This is a process whereby small groups of people are bringing knowledge and are accepted by the local population for access to this information rather than a general invasion or migration (Fitzpatrick 2009, 183-5). If this is the case it might be why the culture and knowledge appears to have been assimilated relatively quickly and then disappeared into local cultural traditions based on a mix of local and Beaker ideas. This appears to be what happened at Black Patch where only Barrows 1 and 10 contain reasonable amounts of Beaker pottery. The only other barrows to contain Beaker pottery were 2 and 11 which just contained the odd sherd. All the other barrows that contained pottery held the slightly later dated Collared Urn variety. It is possible that Barrows 1 and 10 acted as originals and were copied later, showing the integration of Beaker ideas. Other than the barrows mentioned, there is little else remaining of the Beaker period at Black Patch, apart from a barbed and tanged arrowhead found in the topsoil of the 2005-6 excavations. The arrival in Britain of the Beaker culture does bring the first recognisable hand held weapon, the bronze dagger, together with bows, wrist guards and barbed and tanged arrows. This has given the impression of a male dominated society (Case 1995, 55). This is disputed by Brodie (1997, 298) who says there is 'little evidence for a male-dominated elite'.

The construction of the round barrows encircling the valley at the beginning of the 2nd millennium BC was probably again a marker of land ownership, particularly as the fertility of the land was recognised either from the slash and burn agriculture or the more settled continuous farming techniques.

Round barrows might require 750 man hours to build (Earle 1991, 93) or on the basis of the calculation for long barrows, five people fifteen days. Five people could come from a group as small as 12, equivalent to an extended family. Allotment of the land for use was probably given by the same type of authority which allowed the construction and allocated the siting of the barrows.

The land was probably farmed before the construction of the field systems (Crowther 2008) but with intensification and possible introduction of rotational farming, larger areas were probably allocated along kinship lines. Land allocation was possibly based on barrows belonging to individual kinship or family groups and contained rather than respected the barrows.

The growing use of agriculture in the subsistence economy would have seen more activity based around agricultural areas but apart from that, life would have been very little changed from their long barrow building predecessors. It was probably at this time the field systems were built to delineate land holdings and to make management of rotational farming and plot allotment easier to control. Enclosing areas for agricultural production would appear to encourage competition both inter family and inter group, particularly if there was an end taker for excess production. From the Beaker Period onwards, inroads into the existing kinship based control were being made by lower groups accessing prestige goods (Thorpe and Richards 1984). This access was presumably gained by increased production of agricultural produce.

The chronology of the field system and the settlement is debatable. Most of the huts appear to be in the corner of fields. Placing so many in this position before the time the fields were created would be difficult. There are three hut platforms which are built over lynchets implying a later date for them. It would be much easier to construct a field system and add huts than the other way around. Given the area over which the field system runs it is possible that some elements of the structures pre-date the field system. These could have been for animals, storage or ritual. However the probability remains that the field systems pre-date the majority of the settlement.

The hut platforms were built to facilitate protection and easy and regular access to the farmland required for intense production. The longevity of the site is attested to by the apparent number of buildings on each holding and the amount of colluvium in both valleys due to Bronze Age activities.

The artifactual evidence shows an extremely competent work force with expertise in building and carpentry, heated stone technologies, pottery making and the processing of fibres, both animal and vegetable. They were tidy, possibly cleaning the house before decommissioning it. As farmers, the occupants were manuring their plots and differentiating as to where and at what time to sow. They were aware of the benefits of rotation and regular weeding. They almost certainly had some knowledge of herbalism and basic healing. They also retained the ability to forage and hunt.

They integrated animal and agricultural management with the use of house cows to produce manure and daily sustenance. The amount of calorific subsistence capable of being produced on each holding indicates a much larger group was capable of being fed even after some produce had been paid to the controlling power. Those not resident were probably moving stock, much as they had for many years. They also probably had control of the bulls and rams which would have been difficult to keep on a settlement site.

The topography of the site shows little concern with defensive matters. Approaches to and large parts of the site were not intervisible across the site. The 360º drawings from the phenomenological survey show that approximately 50% of the site was hidden from view in all three drawings. Either there was no warfare or they had faith in their group’s ability to cope with such problems.

Even with all this knowledge, life would have been hard with the regular routine of looking after house animals, weeding the crop, preparing and cooking, collecting fuel, maintenance, looking after children and collection or trade of other commodities. Consistency of yield must have been a great concern and there are many examples of what appear to be structured depositions to increase fertility. These could be opening or closing depositions on the birth or death of a human or house, or just made for improved fertility in the near term. Their cosmology was probably based around the domestic hearth and agricultural cycle, the hearth being at the centre of life and the agricultural cycle represented by sunrise moving along and back over the encircling hills. Knowledge of ancestral ties and kin groups would also have been important in negotiating land tenure and in making alliances with other groups for mutually beneficial purposes. Knowledge of such friendly groups whose help might be required in times of difficulty would also have been important.

The threat of war probably got bigger at this time. The number of local hoards containing weapons increased. Drewett considers that the inhabitants of Hut Platform 4 left in a hurry leaving relatively large amounts of bronze, including weapons. This collection of bronze probably belonged to a ‘Big Man’ (Earle 2000, 203). The successors or survivors now built enclosed settlements near the top of the slope. Whilst this is not ideal for living purposes it is a vast improvement in regard to intra-site sight lines and defensive positioning.

Why did they leave?

There are many reasons for site abandonment including climate change, economic change, war, disease and soil erosion. Disease, whilst possible, did not affect other areas and so must have been quite localised. It is difficult to find evidence in the archaeological record. In the case of Black Patch, soil erosion would also seem unlikely given the depth of loess remaining in the western valley. The other three conditions might well be connected.

Two recent reports on climate change have been published (Dark 2006; Amesbury *et al.* 2008). They propose two periods of climatic downturn in the Bronze Age. The first is the period between 1395 and 1155 cal BC suggested by Amesbury *et al.* (2008, 87) to be a ‘major shift to a cooler and/or wetter climate’. This work was specifically looking for evidence of abandonment of the Dartmoor Reaves but other work from Northern Britain, primarily Charman *et al.* (2008), shows similar results. There are small discrepancies in dating but Amesbury *et al.* are confident this climatic shift is widespread and supports ideas of abandonment of the Reaves at this time. Their findings show a period of milder more stable conditions from circa 2000 to 1455 cal BC, followed by sudden climatic worsening between 1455 and 1395 cal BC.

The second report is by Dark (2006) who suggests a major climatic downturn around the time of the Bronze/Iron Age transition, c 800 BC (Needham 2007, 40) but this does not seem to have caused any significant change in land use (Dark 2006, 1392). This event is described as minor (Amesbury *et al.* 2008, 95). The first climatic downturn must have affected Black Patch, making arable farming harder and probably being a major reason for intensification.

The struggle for overall control between existing kin groups and competitive newcomers probably caused economic disruption which, by the time of the Hut Platform 4 abandonment, seemed to have moved in favour of the competitive regime given the amount of non-ceremonial prestige goods (bronze) found there. Thus, the stability of the kin group control period would have come to an end. Both climate change and economic change are listed by Wileman (2009) as causal correlates in the outbreak of war. Amongst others mentioned are abandonment of settlements, appearance of defensible settlement strategies, changes in settlement morphologies, change in subsistence economy, burnt sites, unoccupied zones developing and a proliferation of weaponry. The first six of these apply to Black Patch in the Middle Bronze Age whilst the seventh is seen in the area surrounding Black Patch as a Late Bronze Age phenomenon. Territoriality is also mentioned as a cause of war.

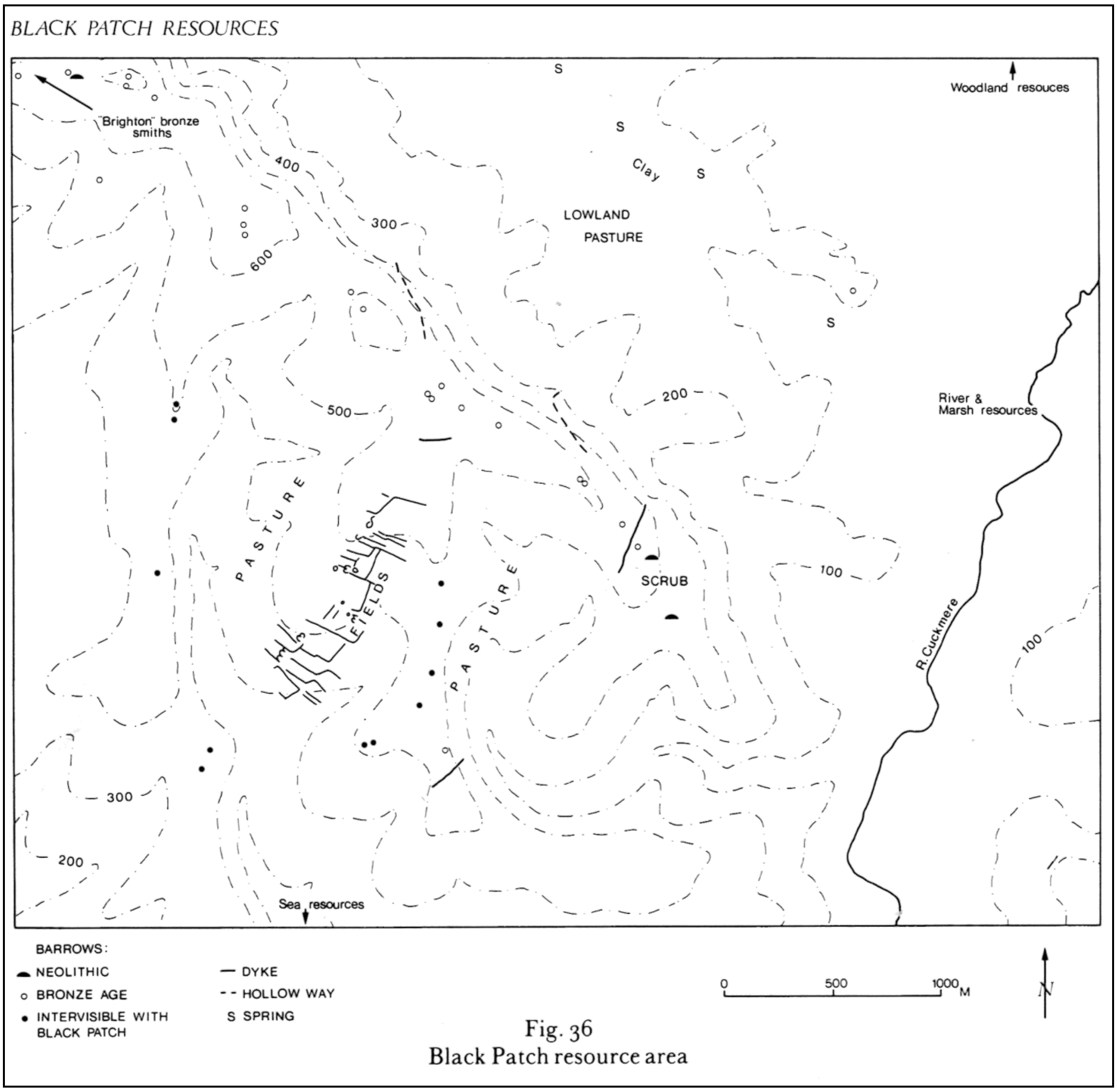


Fig. 9.5 Resource area around Black Patch. From Drewett 1982, Figure 36, 394

The topography of Black Patch and the surrounding area has a large number of scarp slopes imposing boundaries on field systems, making them smaller than other field systems in the two neighbouring blocks of Downland which have different topographies. Perhaps larger amalgamated territories emerged in these areas due to a worsening climate. Eventually invading the Black Patch site was seen as a way of increasing agricultural production probably during the Middle Bronze Age period.

Cross ridge dykes are also notorious to date but pottery association in Sussex would date them to the Late Bronze Age (Hamilton and Gregory 2000, 63) and therefore after the initial periods of attrition. They seem to surround the site and together with the scarp slope to the west, cut it off from its surroundings in particular the river and the Downland ridge just north of the site. Both of these are perceived as possible routes-ways in the Later Bronze Age (Figure 9.5).

This may be an attempt to disassociate the land from its historical owners. Apart from few Post-Deverel-Rimbury sherds and the odd sherd from the Roman and Middle Age periods there is no evidence of any inhabitation. It appears possible that after several generations of worsening weather and increasing territoriality, the inhabitants of Black Patch were forced off the land and the area annexed from the rest of society, either as a warning or as part of a buffer zone.

9. 6 Conclusion

Given the constraints of fine-grained dating in a very busy period of history, the above analysis shows the importance of a holistic approach. By taking the available evidence from archaeology, topography and geology, science, ethnography and theoretical archaeology, an overall picture can be postulated. From this it is possible to achieve reasonable and coherent answers to the research questions. A few of these answers are speculative but they provide a target for future research to prove or disprove.

Chapter 10. Site Comparisons

10.1 Introduction

This section will compare individual sites and groups of sites for similarities and differences. It will start with a comparison of the Black Patch and Itford Hill sites. These sites will then be compared to other Later Bronze Age sites in the Downland region between the rivers Ouse and the Arun, Arun and Adur and west of the Adur. The problems attached to such a study are several. The most obvious are different standards of excavation techniques, recording, reporting and storing of not only archives but also artefacts.

Chronology is another major problem. Most sites are dated by their pottery assemblages and radiocarbon dates. Both have been subject to recent revisions.

In pottery, works by Barrett (1980), Hamilton (1993) and Seager Thomas (2008) have not only redefined periods but also refined dates. This has led to some confusion and disagreement and a degree of circularity. Where this is the case, mention will be made.

In radiocarbon dating, refinement and improved methodology led to Needham's (1996) and Needham *et al.*'s (1997) work on the British Bronze Age. Date sources and interpretations will be stated wherever possible and Needham's or later defined dates will be given greater credibility.

10.2 Black Patch and Itford Hill

Black Patch and Itford Hill are approximately seven km apart in the same block of Downland. Both have been extensively excavated (Burstow and Holleyman 1957; Drewett 1982; Tapper in prep).

Dating evidence

The data in Table 10.1 is taken from Drewett (1982, 391-2) and Hamilton (2002, 83).

Needham (1996, 135) has complained that the poor precision in the radiocarbon dating at Black Patch gives extremely broad ranges of 230 radiocarbon years for Hut 1 Hut Platform 1 and 240 radiocarbon years for Hut 3 Hut Platform 4. The medians are 2965 and 2900 BP respectively. Needham warns against using the above data for fine chronology. He is much happier using HAR-2940 which was found in close association

Table 10.1 Radiocarbon dates from Black Patch and Itford Hill

Site **Black Patch**	**Lab number**	**Radiocarbon result BP**	**Calibrated date range (2 sigma)**
Grain from Hut Platform 4, pit 5 (82)	HAR 2939	2780 +/- 80	1206-800 cal BC
Grain from Hut Platform 4, pit 3 (50)	HAR 2940	3020 +/- 70	1430-1020 cal BC
Grain from Hut Platform 4, pit 4 (83)	HAR 2941	2970 +/- 70	1187-805 cal BC
Grain from Hut Platform1, pit (49)	HAR 3735	2970 +/- 80	1410-935 cal BC
Grain from Hut Platform1, pit (49)	HAR 3736	3080 +/- 70	1504-1128 cal BC
Grain from Hut Platform1, pit (49)	HAR 3737	2850 +/- 70	1258-832 cal BC
Barrow 3 Pit 10 inhumation	HAR 3976	3830 +/- 80	2480-2030
Grain from Hut Platform 4, pit3 (50)	BM 1643	2790 +/- 40	N/A
Itford Hill Burnt barley on floor of storage pit, Hut E	GrN-6167	2950 +/- 35	1292-1018 cal BC

with a bronze razor he was able to date to the same time period (Needham *et al.* 1997, 90). The balance of Needham's interpretation would put at least part of Hut Platform 4 as being occupied at the end of the first millennium BC circa 1050 BC. Hamilton's interpretation of the Black Patch dates is that they provide a range of the 14th -11th centuries cal BC (Hamilton 1997, 41). This is more in line with the finding of the previous chapters. If this is the case it would put Black Patch as being settled at least intermittently for up to three hundred years, again agreeing with the previous chapters.

There is only one date for Itford Hill (Grn-6167), also placing Itford Hill towards the end of the first millennium BC. However Hamilton suggests date ranges of 1253-1245, 1211-1113 and 1095-1077 cal BC date range.

Pottery

Table 10.2 shows the similarity in Ellison type forms from Black Patch and Itford Hill. They both have types 1, 2, 3, 5, 6, 7, 9 and 10 in common. The only difference is that Itford Hill has type 5, squat ovoid urns, whereas Black Patch has type 8, plain bucket shaped urns.

Table 10.2 Ellison Type Pottery found at Black Patch and Itford Hill

SITE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Black Patch 1977-79	Y	Y	Y			Y	Y	Y	Y	Y									
Black Patch 2005-06	Y	Y	?			Y	Y	?	Y	Y									
Itford Hill	Y	Y			Y	Y			Y	Y									
Itford Hill Cemetery		Y	Y			Y	Y		Y	Y									

Deverel-Rimbury pottery was found on Hut Platforms 1, 2, 3 and 4 as well as Enclosures 1, 2 and 4. It was also found under lynchet 1, thus dating all the features on the site to the Deverel-Rimbury period. This is also the case for Itford Hill.

Post-Deverel-Rimbury pottery was found in the upper levels of both excavations at Black Patch but is not reported at Itford Hill where the next period of occupation, according to the pottery evidence, is Romano-British. This is in contrast to Black Patch where very little pottery dated later than the Bronze Age has been found.

The following Table 10.3 shows the differences in the weight of pottery for all the hut platforms at both Itford Hill and Black Patch. As can be seen at both sites, there are considerable inter-site differences and much more pottery was found at Itford Hill.

Table 10.3 Pottery weights by hut at Itford Hill and Black Patch

Itford Hill		**Black Patch**	
Hut A	1.79kg	Hut P1 1Hut 1	0.22 kg
Hut B	0.85kg	Hut P1 Hut 2	0.35kg
Hut C	0.68kg	Hut P 4 Hut 1	5.46kg
Hut D	2.24kg	Hut P 4 Hut 2	0.51 kg
Hut E	3.43kg	Hut P 4 Hut 3	1.90 kg
Hut F	0.43kg	Hut P 4 Hut 4	1.6 kg
Hut HandJ	2.78kg	Hut P 4 Hut 5	0.08kg
Hut K	1.47kg	Hut P 3 Hut A	0.79 kg
Hut L	9.55kg	Hut P 3 Hut B	0.04 kg
Hut G	0.06kg	Hut P 3 Hut C	0.06 kg
Hut M	0.06kg		
Hut N	0.19kg		

Stone

The various types of stone utilized on both sites are very similar as can be seen from Table 10.4.

Table 10.4 Stone Classifications for Black Patch and Itford Hill

Site	**Tertiary Beach pebbles**	**Sarsen**	**Sandstone**	**Sandstone ferruginous**	**Greensand**	**Horsham**	**Calcite**	**Quartzite**	**Malm stone**
Black Patch 2005-06	Y	Y	Y	Y	Y		Y		
Black Patch HP1	Y	Y		Y					
Black Patch HP4	Y		Y	Y	Y				
Itford Hill	Y		Y	Y	Y		Y	Y	

Seager Thomas has suggested a wider stone procurement area for Itford Hill including West Sussex. This, he suggests, reflects Hamilton’s slightly later radiocarbon dating of this site (Seager Thomas 1999, 47). However, the presence of Mayen lava (not in Table 10.4) from modern day Germany indicates long distance links for Black Patch as well.

Flint

The excavated flint work from both Black Patch excavations had high numbers of flakes, workshop waste cores and similar tool types differing only in numbers of piercers and the lack of horned scrapers at the first excavation. The collection of worked flint from Itford Hill is much smaller. There were 13 scrapers, most of which had a high amount of cortex still attached, one borer (piercer), one saw, one pick, eight hammer stones and two cores. There are no horned scrapers at Itford Hill.

Whilst there may be a difference of priority and recognition abilities between the excavations at Black Patch and Itford Hill, there is still a large difference in the size of and variation in the assemblages. Whilst some of the difference may be topographical (the Itford Hill site is at the top of a ridge whilst the Black Patch sites are situated over several hundred metres down a slope) or post depositional in nature, the poorer quality and fewer numbers of the Itford Hill assemblage could indicate less reliance on flint as well as a shorter life span or smaller environs.

Bones

Both sites have a small range of specimens of various ages indicating both sites were producers of primary and secondary animal products. Horse has also been found at Itford Hill (Greis 2002, 35). Although not totally excavated, there is evidence of animal huts, ponds and grain storage pits at Itford Hill.

Black Patch alone produced non- domestic bones belonging to red deer and bird. Their lack at Itford Hill may well have been due to the excavators’ collection policies.

Grain

The large number of identical weed species at Black Patch and Itford Hill inevitably means similar implications for husbandry methods that have similar sowing, weeding and fallow patterns. Neither site contained naked barley and the barley crop from Itford Hill was affected by some form of deficiency, possibly an indication of soil erosion or climate change.

Burials

Both sites have human remains which have been buried near or in huts. The one at Black Patch was of an eight year old unsexed child whose cremated remains had been placed in an Ellison type 2 Deverel-Rimbury Urn in a ditch just south of Hut Platform 1. The cremation was done at high temperature (Drewett 1982). The burial at Itford Hill is quite different as the bones have been dated to the Beaker period and were found buried in a pit, with an ox tooth, behind Hut 3. The bones belong to a young? female and a child (Jackson 1956, 212).

Both sites are also situated with burials in nearby barrows.

Depositions

Compared to Black Patch, the Itford Hill constructional postholes are remarkably clean. Only Hut C has any artefactual inclusions in its postholes. Postholes 2 and 3, situated at the back of the hut, both contained bone, pottery and loom weight fragments.

At Black Patch, two postholes (8 and 9 from Hut 1 on Hut Platform 1) contained pottery and flint (8) and stone (9). All of the huts on Hut Platform 4 had postholes containing artefacts, mostly flint and pottery, with 18 of the 39 constructional postholes containing at least one artefact. There is a marked difference between Huts A, B and C on Hut Platform 3. Only two of the 15 constructional postholes of Hut A do not contain artefacts whereas only three out of nine in Hut B and two out of nine in Hut C do.

Only one entrance posthole at Itford Hill contained artefacts. This is Hut D which contained stone and a chalk phallus. The phallus will be discussed below.

15 of the 22 features associated with entrances on Hut Platform 4 at Black Patch contained artefacts, whilst those on the other two platforms contained few artefacts. These differences are unlikely to be post-depositional as there is more pottery at Itford Hill.

Structured Depositions

The main depositions at the two sites would appear to be linked to fertility. Hut 1 Hut Platform 1 and Hut 3 Hut Platform 4 at Black Patch and Hut E at Itford Hill have depositions of burnt grain. Hut A at Black Patch has an ox (*Bos sp.*) skull and long bone deposition, whilst Hut N at Itford Hill contained the majority of an ox carcass at the back of the hut. The positioning of these depositions suggests they may also have been closing depositions. Hut D at Itford Hill contained a chalk phallus and Hut A Hut

Platform 3 contained what is here interpreted as a flint phallus in association with what appears to be a flint resembling a female pelvic girdle. The only other deposition is of fire-cracked flint in association with pottery in Hut A, possibly funerary .

Site plans and Construction

The main characteristic of both excavated areas is the close proximity of buildings to each other albeit in separate groups. This is true whether or not they are enclosed as at Itford Hill or unenclosed as at Black Patch. These groups are much nearer to each other at Itford Hill than at Black Patch. However the huts at Black Patch are larger. Five of the huts at Black Patch have a living area of over 40m² whereas the largest building at Itford Hill is Hut D which is 36m² followed by Hut K at 30m². All the huts at Itford Hill are either totally or partially enclosed. At Black Patch there are only three enclosures and five unenclosed settlements.

There are different interpretations of both sites. Both the original excavators believed Hut Platform 4 at Black Patch and the entirety of Itford Hill were inhabited at the same time, though not contemporary with one another. More recent interpretations, Ellison (1978) of Itford Hill and Russell (1996) of Black Patch, have split both sites into smaller units on the basis of artefacts contained and site planning. This has made some of the units at Itford Hill resemble Hut Platform 4 at Black Patch. Neither of these interpretations considered the accompanying field systems or the requirements of animals in the form of ponds or huts. As far as the author is aware, Itford Hill has not been subject to a more recent field survey, although the presence of a field system to the north and south of the site has been observed by the author.

Conclusion

The similarities between the two sites and the numerous radiocarbon dates at Black Patch imply that the settlement sites were occupied either contemporaneously or nearly so at the end of the Deverel-Rimbury period. Both sites also contain signs of wealth and power. The bronze (Drewett 1982) and possible burnt mound (Tapper in prep.) at Black Patch and the burnt mound at Itford Hill show signs of possible aggrandizement. Both settlement sites appear to have been abandoned at about the same time, although there is some evidence (radiocarbon dating and stone procurement) that Itford Hill was slightly later. Itford Hill has a cross ridge dyke situated between the settlement site and the field system. The only existing cross ridge dykes in this block of Downland are situated close to the only two proven settlement sites of Itford Hill and Black Patch. It is possible that the inhabitants of both these sites succumbed to the rise of other stronger emerging political powers from elsewhere.

10.3 Other sites between the Cuckmere and Ouse Rivers

The only site identified with Deverel-Rimbury pottery is the Iron Age-Romano British site excavated by Gerrard–Smith (1939, 293-5). The site lies some 500m to the north-west of Seaford Head. An Ellison type 1 funerary urn was found and although it was surrounded by black earth, the site had been too disturbed for any stratification to be applied (Gerrard-Smith 1939). Because of the situation in which this find was made, all it shows is a Middle Bronze Age connection in the close vicinity of Seaford Head.

Denton Hill (TQ478025) is located at the top of the scarp slope on the western side of Black Patch on a south-easterly facing spur of the Downs. It is associated with what appears to be a large un-surveyed field system. This field system is numbered TQ 40 SE10 - MES1966 in the East Sussex HER. Whilst field walking, Bell (1973) found a concentration of pottery he likened to that at Itford Hill. This was scattered in a small circular depression about 6.5m in diameter with no reported sign of enclosure.

Similar pottery, part of a saddle quern and some indeterminate flint flakes were found in the area surrounding the depression. Unfortunately, the pottery has not been formally recorded. One hut circle by itself would be unusual in this area, given the evidence from Black Patch and Itford Hill.

Table 10.5 Sites with PDR pottery between the Rivers Cuckmere and Ouse. After Seager Thomas 2008

Site	Pottery Type	Dates Associated with Pottery Type/Types
Bishopstone	Dev	950-800 (cal. BC)
Glynde	Gen	
Beddingham	PW/Dev-Dec	1150-500 (cal. BC)
Black Patch*	Dev/Dec	950-500 (cal. BC)

Key Dev= Developed Post-Deverel-Rimbury Gen= Generic Post-Deverel-Rimbury PW= Plain ware Post-Deverel-Rimbury and Dec= Decorated Post-Deverel-Rimbury

* Also contained Deverel-Rimbury pottery

The above table shows that only the site at Beddingham Roman Villa has pottery of Post-Deverel-Rimbury plain ware c1150-950 cal BC (Seager Thomas 2008 20), although it is possible Glynde Hill may also have had pottery of that date. Unfortunately neither has been published.

Bishopstone seems to have a gap with no Middle Bronze Age settlement/Deverel-Rimbury pottery.

The only other settlement site of this period currently known is Charlston Brow. Here one hut is oblong and the other of indeterminate form. The finds here are mostly Middle to Late Iron Age and Romano-British. It is associated with a field system and whilst it may have Middle Bronze Age associations, they are not readily visible.

Table 10.6 Field systems recorded on the East Sussex HER for the Downland Block that contains Black Patch and Itford Hill

Map ref	Name
TQ 469 033	Gardeners Hill
TQ 4403 0415	Tarring Neville
TQ 4674 0190 - TQ 4660 0164	Norton Hill
TQ 48250339 and TQ 47520276	Denton Hill
TQ 47910397	Heighton Hill
TQ 481048	Charleston Brow
TQ 508 028	France Bottom
TQ 501022	Arlington
TQ 5105 0085	Frog Firle/Hindover Hill

Field systems

The above table does not include the field systems around Black Patch and Itford Hill, nor does it record other field systems such as the one at Rathfinny almost adjacent to Black Patch (Butler 2001). When this is added to the number above, it makes at least 12 field systems.

Work done by the East Sussex County Archaeologists’ office (Figure 10.1), shows that about 50% of the Downland block mentioned in Table 10.6 is covered by field systems.

For the complete block, 1,400ha out of 2,800ha are field systems. If they were all Bronze Age in date and in a three year rotation, they would provide 80% of the calories for 11,433 persons per year in an average crop harvest and would require 1,634 people to service the crops.

If only 20% of the fields were Bronze Age in date and only half were being managed at any one time, that would feed 1,143 and require 163 producers.

For the whole of the Deverel-Rimbury period, there are only two definite settlement sites, one at Black Patch and one at Itford Hill and only two other possible sites, one at Denton Hill and one at Rathfinny that have been discovered. Thus we have two definite and two possible settlements between 12 known field systems. This would mean we have yet to find at least eight settlement sites. This is hard to believe in an area criss-crossed with footpaths and of which large portions have been photographed from the air. Another possibility is that not every field system had a settlement. The nomadic farming lifestyle may possibly have been the norm for over 400 years and maybe some did not see the need for change. This would imply only a partial conversion to sedentary farming and field use being unchanged for possibly over 1000 years. This eventuality could also account for the spare food resources. If this is the case, not only a developed political system would have been required but also sophisticated logistics and exchange mechanisms.

The above calculations would put the land population between a maximum of 11,000 and a minimum of 1,100, given the conservative nature of the data interpretation.

The above numbers show why previous efforts at population estimations have been inconclusive (Drewett 1980: Gregory 1998). What does seem evident is that not all the field systems had permanent settlements. Those settlements with permanent occupation were capable of producing surpluses and there were no internal problems with shortages of land or food at this time. Those without permanent settlement would certainly have provided enough for their users but possibly not a great surplus. The political management and effort involved in creating and controlling these field systems would have been quite sophisticated. Peaceful alliances made with neighbours by the process of reciprocation appear to have worked at this time, possibly breaking down when outsiders eventually started to raid and then invade.

Estimates for the number of round barrows in this block of Downland are between 119 (Grinsell 1934) and 123 (East Sussex HER). This is over 15% of the total number of barrows on the Sussex Downs, which is estimated by Grinsell to be about 800 (Grinsell 1934). The organization required for allowing a barrow to be built, deciding where to put it and constructing it, suggests a pretty robust political system was in place in the late Neolithic/ Early Bronze Age Beaker period. This control appears to have survived until the end of the Deverel-Rimbury period, although it is quite possible that its structure was in flux throughout its life.

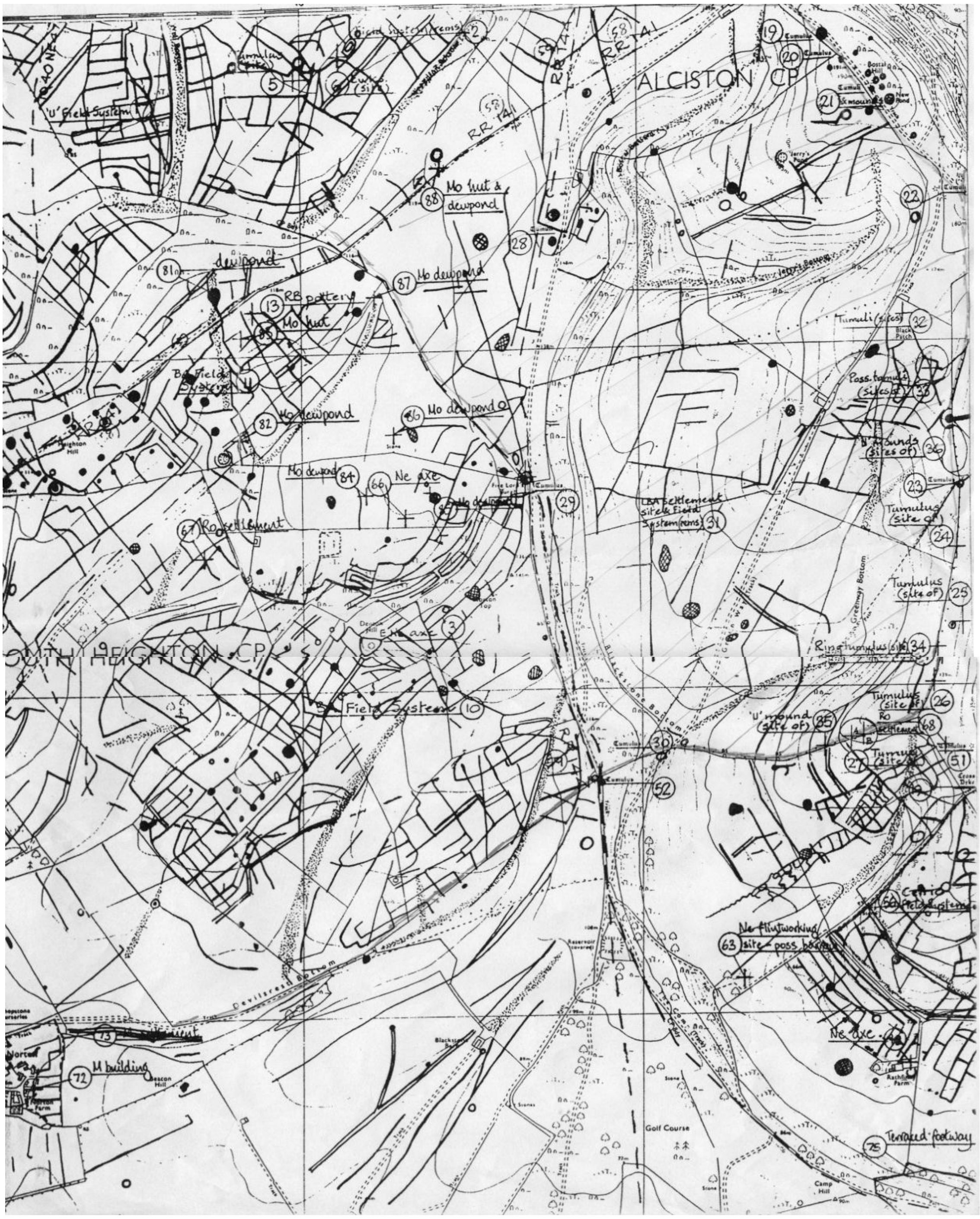


Fig.10.1 Map showing field systems plotted by East Sussex County Archaeologists Dept for area immediately surrounding Black Patch. East Sussex C.C.

It appears to break down on this Downland block when both Black Patch and Itford Hill go out of use, with a cordon of cross ridge dykes and scarp slopes blocking access to the sites. Evidence of later usage of Black Patch was restricted to a small amount of Post-Deverel-Rimbury ware in the upper stratigraphy suggesting the site was only used occasionally, possibly by nomadic herders. No Post-Deverel-Rimbury pottery was found at Itford Hill. On the basis of the pottery evidence, the site was not used again until Roman times. It is impossible to tell what happened to the users of the other field systems. Perhaps they had became affiliated with either the Black Patch or Itford Hill groups before they were overcome, or allowed to continue to herd their animals under the power of those that had vanquished both Black Patch and Itford Hill. The large number of barrows and field systems combined with no known Late Bronze Age habitation sites adds to the possibility of the area being a deserted buffer zone used only by itinerant herders. Later Bronze Age sites appear to the east of the Cuckmere at Fore Down, Bullock Down and Shinewater. Fore Down is situated just on the other side of the Cuckmere and is associated with a large field system. It has been dated as solely Late Bronze Age on the basis of its pottery (Chuter 1987). However the pottery has been reassessed by Seager Thomas (2011, 2) and ‘does include some Middle Bronze Age pottery’.

Incursion into the neighbouring westerly block of Downland is therefore a possibility. There is however also a cross ridge dyke close to the site between it and the River Cuckmere. Shinewater, a Late Bronze Age port, indicates the importance of this area at this time. A hill fort was also established at Seaford Head in the Late Bronze Age/ Early Iron Age period. This site has commanding views across the Downs. It was possibly chosen for observing movement on the Downs particularly at cross ridge dykes.

10.4 Downsview, Patcham Fawcett A and B, Varley Halls and Hollingbury

This group of sites is located in an area with few scarp slopes (Figure 10.2). The dating evidence for these sites and the associated pottery assemblages is earlier than in the Black Patch block, as can be seen in Table 10.7. The occurrence of a unique to Sussex form of Deverel-Rimbury pottery shows links to South-East Essex which had presumably arrived from the north (Weald) or by sea. It would also appear to rule out an easterly or for that matter westerly spread of the population at this time.

The apparent lack of animal breeding at the other sites might mean Varley Halls was acting as a feeder site and therefore specializing in the breeding of young animals and meat production. It is of interest that the only structured deposit of animal bones is also found at Varley Halls. The lack of loom weights and spindle whorls, with the exception

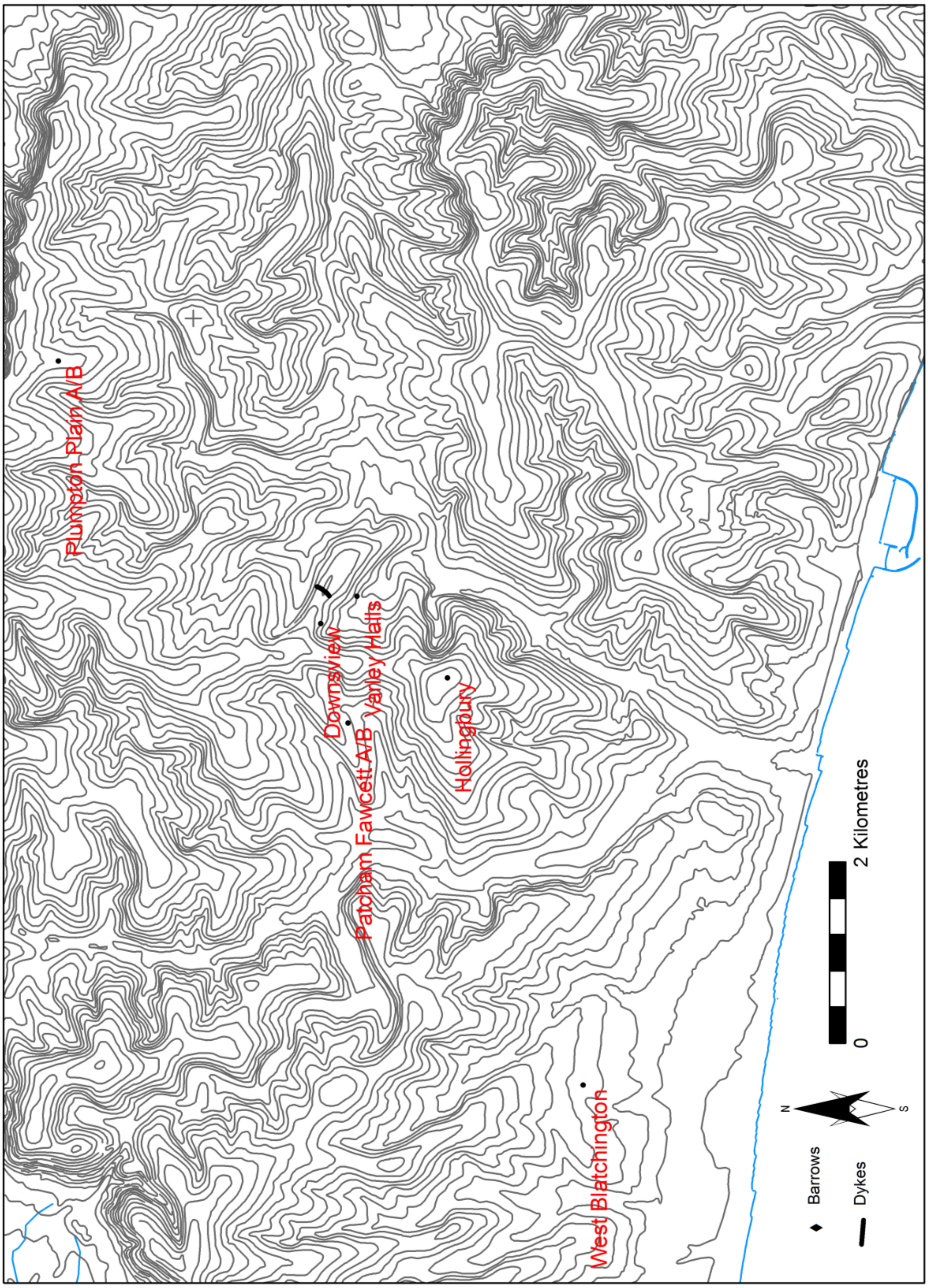


Fig.10.2 Contour Map of the Downsview area

of Hollingbury, which like Black Patch and Itford Hill has a hut that specialised in weaving, is surprising. The site at Hollingbury is very disturbed and dating is difficult. The length of time taken to weave probably means that there is another weaving site in the area. The presence of beans at both Downsview and Patcham Fawcett B shows the possibility of a three year crop rotation. These two sites have evidence of crop processing, either in the finds of quern stones as at Downsview, or in the excavated features at Patcham Fawcett B. There was no evidence of beans or crop processing other than for on-site use at Varley Halls.

Table 10.7 Site comparison for site clusters between the Rivers Adur and Ouse

	Downsview	**Patcham Fawcett A**	**Patcham Fawcett B**	**Varley Halls**	**Hollingbury**
Radiocarbon Dating	Occupied for 580-860 yrs 95% conf between 1680 and 1570 cal BC until 1020 and 800 cal BC 95% conf	None	None	M.B.A. 3130-2890 BP	None
Pottery	Deverel-Rimbury Earlier than Itford Hill. Overlap/earlier Black Patch. Overlap Varley Halls. Overlapped by Mile Oak earlier and later. Post-Deverel-Rimbury 11th-9th C.cal. BC Regional associations with Ardliegh Group of pottery found in S.E. Essex Post-Deverel-Rimbury 1150-500 BC	Deverel-Rimbury Horse shoe decoration on bucket Urns found only at Downsview and Mile Oak in Sussex. Regional associations with Ardliegh Group of pottery found in S.E. Essex Post-Deverel-Rimbury 1150-500 BC	Deverel-Rimbury Best matches Downsview, Varley Halls Plumpton Plain and Itford Hill Post-Deverel-Rimbury Comes from isolated contexts. 8th Century BC	See Downsview and Patcham Fawcett for Deverel-Rimbury. Post-Deverel-Rimbury 8/7th BC	Dec Post-Deverel-Rimbury
Animal	Cattle. Dairy. No evidence of breeding. Sheep. Dairy. Wool. No evidence of breeding.	Cattle. Dairy. No evidence of breeding. Sheep. Dairy. Wool. No evidence of breeding.	Cattle. Insufficient data Sheep. Insufficient data. Evidence of	Cattle. Dairy Evidence of breeding. Sheep. Dairy. Wool. Evidence of breeding.	

	Downsview	**Patcham Fawcett A**	**Patcham Fawcett B**	**Varley Halls**	**Hollingbury**
	Evidence of Pig, Dog and Horse	Evidence of Dog	Pig, Dog and Horse	Evidence of Dog and Pig	
Loom weights spindle whorls	None	None	None	None	Loom weights
Grain/Beans	*Hordeum vulgare* *Vicia faba*	*Hordeum vulgare*	*Hordeum vulgare Vicia faba*	*Hordeum vulgare*	
Seeds	*Falopia convovulus*				
Flint	General toolkit	Small general tool kit	Small general tool kit	General tool kit	
Querns	Yes	None	None	?	
Stone	Sarsen Upper Sandstone Ferruginous and Horsham Sandstone Quartzite Oolitic limestone	Sarsen Upper Sandstone Ferruginous and Horsham Sandstone Quartzite	Pebbles Sarsen Quartzite	Sarsen Ferruginous Sandstone Quartzite	Not available
Metal work	Yes	None	None	Yes	Bronze dating to c10th-c9th BC
Metal work tools	Sheet metal Moulds Whetstone	None	Whetstone	None	None
Enclosed	No	No	No	No	Yes
Depositions				Just S.E. of pond articulated incomplete skeleton of a mature cow dated to M.B.A. by carbon date	

This is also possibly indicative of the fact that they were specializing in animal breeding. There is no evidence of bronze founding at Varley Halls although there was not only bronze but also faience. These finds were both in the colluvium over the site but it could be argued contra (Greig 1997, 31), that far from being a poor site because of the lack of fine pottery, this was a rich site because of their breeding and trading of livestock.

The only sites with possible metal working evidence are at Downsview and Patcham Fawcett B. The second has no evidence of metal artefacts. The evidence at Downsview is very sparse and not necessarily indicative of a local site hierarchy (Needham 2002, 185-6). Varley Halls is the only site with a human inhumation. A 25 year old female was placed at the back of roundhouse III on terrace 1424 context 2705. It was a crouched burial whose head points west and is carbondated 1210-1000 cal BC.

Site construction

Whereas the huts at Black Patch and Itford Hill are packed closely together, all these sites utilize a much larger area for their buildings. All have ponds and possible animal shelters but not in the two-hut formation as at Black Patch and Itford Hill, where the stock hut is usually located very close to the human hut. The houses are generally slightly smaller with the exception of hut A at Patcham Fawcett B which is just over 50m². There appears to be no thought as to the defensibility of the site.

Field Systems

Burstow (1935) surveyed the area between the Adur and the Ouse for field systems. He found that out of the approximately 16,835 ha, at least 23% was covered in field systems. There are eight M.B.A. settlements known in this Downland block: Mile Oak, West Blatchington, Patcham Fawcett, Downsview, Varley Halls, Ditchling Beacon, Plumpton Plain and Hollingbury. There are eight sites for 3,768 ha of field system or one site for 471 ha compared to one site for 350 ha between the Cuckmere and the Ouse.

Conclusion

The settlements seem to predate those between the Cuckmere and the Ouse and it can be argued that a certain amount of site specialisation, particularly in animal husbandry, was occurring. The only fertility related animal structured deposition was at Varley Halls, as were the only finds of immature animal bones. The lack of weaving related tools, other than at Hollingbury, also shows site specialisation. Pottery evidence indicates communication networks to Essex and Hampshire. The nearest source of oolitic limestone used as a mould is 250km to the west. Copper alloy, quartzite and Horsham stone also show networks for the acquisition of material goods. There is a seemingly westerly bias to these distributions.

Only the hillfort at Hollingbury is enclosed, implying that defence was not an issue. This idea is further advanced at both Downsview and Varley Halls which are built on the side of steep hills. Co-operation between sites and larger areas of gift exchange are indicative of larger tribes or chiefdoms (Earle 2000, 246). These were possibly centred on Downsview which has a radiocarbon date range of over 550 years although all of the sites span both the Middle and Late Bronze Age.

10.5 Sites between the Adur and the Arun

The cluster of sites at New Barn Down, Cock Hill and Blackpatch were all excavated before 1955 and have much less thorough and precise information than the previous two sections. Table 10.8 provides the relevant information from these three sites.

Table 10.8 New Barn Down, Cock Hill and Blackpatch

Site	New Barn Down	Cock Hill	Blackpatch
Radiocarbon Dating			
Pottery	Dev-Rimbury	Dev-Rimbury	Dev-Rimbury
Animal		Sheep, Cattle. Evidence of Horse Dog and Red Deer	
Loom weights spindle whorls	No	Yes 10 in hut 1 PV	No
Grain			
Seeds			
Flint	General	General	General
Querns	Yes	Yes	
Stone	Pebbles Ferruginous Sandstone Unspecified Greensand	Sarsen Unspecified Sandstone Lower Greensand Horsham Stone	Pebbles

Site	New Barn Down	Cock Hill	Blackpatch
Metal work	Yes		
Metal work tools		Yes	
Enclosed	Yes	Yes	Yes
Depositions		Skull of Ox found unstratified in ditch	Complete Lamb buried between postholes centre –rear left of hut

Unfortunately there are no carbon dates for these sites but all have Deverel-Rimbury pottery.

The only site to have a general deposition of animal bones is Cock Hill, although both Cock Hill and Blackpatch may have structured depositions. The complete lamb buried between postholes in a hut at Blackpatch appears to be structured but there must be some doubt about the ox skull found unstratified in a ditch at Cock Hill. Only Cock Hill has loom weights but both New Barn Down and Cock Hill have querns and also metalwork or metal work related artefacts. The information is too scanty to come to any conclusions, other than that specialisation also appears to be taking place. However all three sites are close to Neolithic flint mines and unlike the other sites discussed in this section are enclosed, possibly indicating fear of raiding. There are no cross ridge dykes in the close vicinity (Figure 10.3).

10.6 Kingley Vale

There is only one known Downland Middle Bronze Age site in Sussex west of the River Arun. This is Kingly Vale (Curwen 1934). It is on the periphery of Wessex. It has mostly enclosed settlements and has also been the subject of a recent field system survey. This found a much greater system than originally thought and some extra hut platforms (English pers. comm.). It was certainly a large and possibly an important site bordering the Wessex region. Finds included a possible ‘incense cup’, a bronze awl and Deverel-Rimbury pottery. The barrows, not the settlement site, are surrounded by five cross ridge dykes (Figure 10.4).

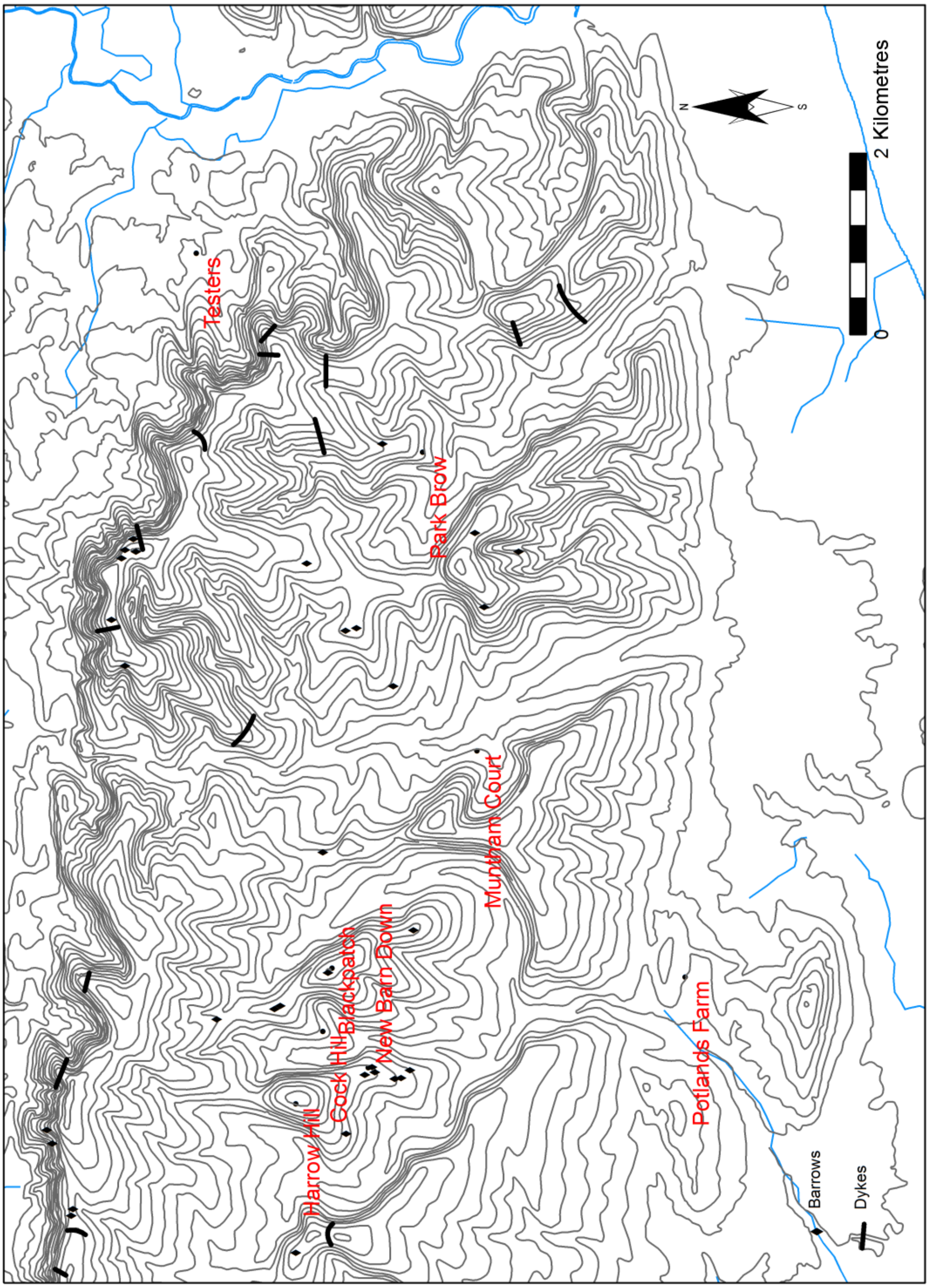


Fig. 10.3 Contour map of area around Harrow Hill

10.7 Coastal Plain Sites

There is only one definite Middle Bronze Age site on the coastal plain and one possible site on the coastal plain. Kingston Buci is definite (Curwen *et al.* 1931) and West

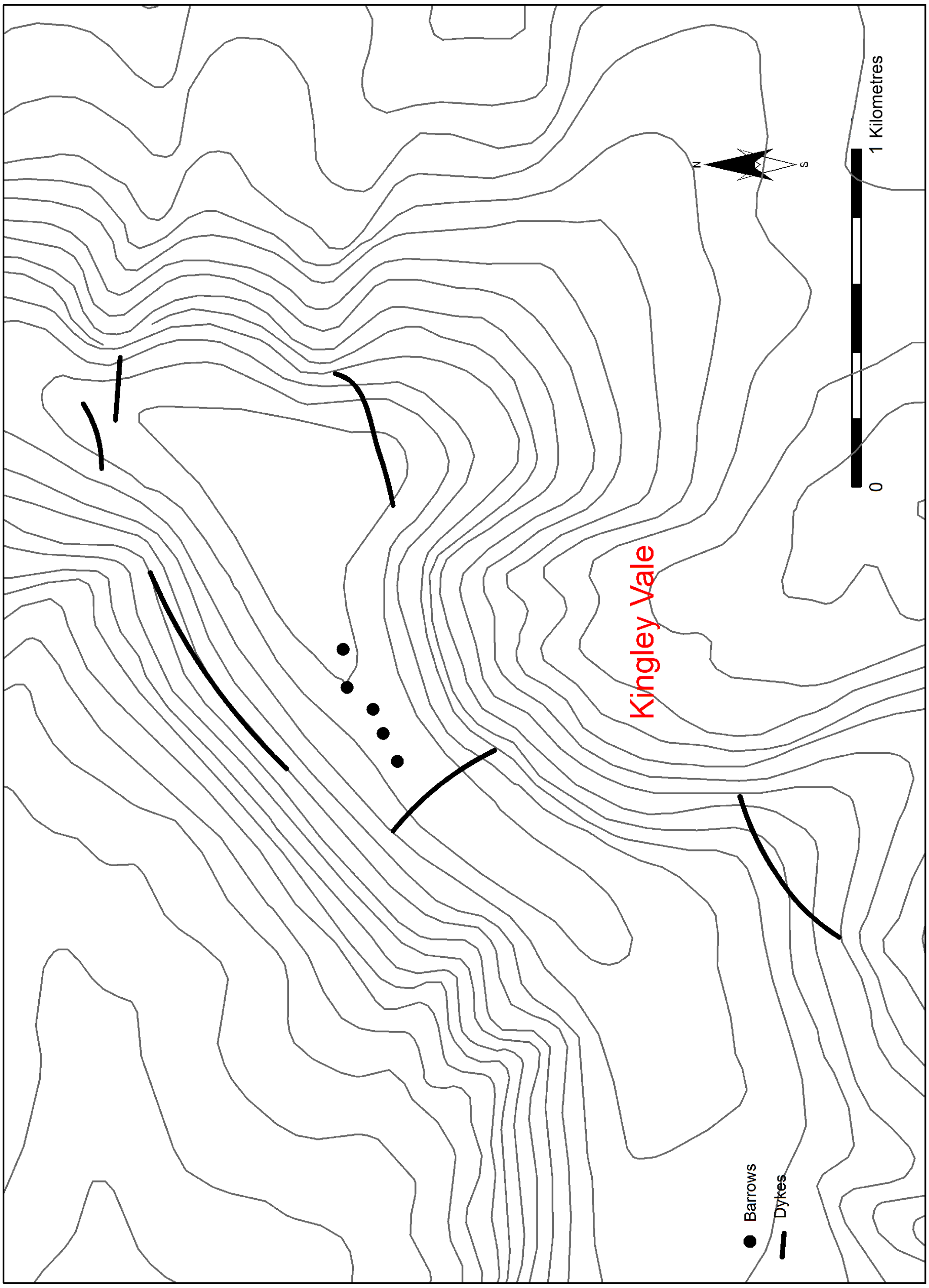


Fig. 10.4 Map of barrows and dykes at Kingley Vale

Blatchington (Norris and Burstow 1950 and 1952) - possible. At Kingston Buci only occasional visits were made by Curwen to inspect the site and finds, so very little is known about the site. However the finds were analysed to show pottery from the Late Beaker Period through to the Middle and Late Bronze Age, as well as sherds from the Iron Age and Romano- British periods. There are also Neolithic polished axes. There is however no site plan.West Blatchington has no Deverel-Rimbury or Post-Deverel-

Rimbury plain ware pottery but is associated with a large field system of possible Middle Bronze Age date.

10.8 Early Late Bronze Age Sites

Although Black Patch appears to have been evacuated by the end of the Middle Bronze Age, it is relevant to the comparison of different areas in the Late Bronze Age to look briefly at sites with Plain Post-Deverel-Rimbury pottery shown in Table 10.9.

Table 10.9 Late Bronze Age sites with Post-Deverel-Rimbury plain ware and Generic Post-Deverel-Rimbury pottery that cannot be dated

Site	Enclosed/ Unenclosed	Pottery Range	Radio Carbondates
Heathy Brow	Unenclosed	PW	No
Fore Down	Unenclosed	PW	No
Glynde	?	Gen	No
Beddingham	?	PW/Dev-Dec	No
Downsview	Unenclosed	Gen	OxA-4810 2755+/- 60BP 1050-800 cal BC
Varley Halls	Unenclosed	Gen	Yes but not associated with pottery
Plumpton Plain	Enclosed	PW-Dec	No
Harrow Hill	Enclosed	Gen	No
Littlehampton	Unenclosed	Gen/ Probably PW	No
Rustington	Unenclosed	PW/Dec	No
Highdown	Enclosed	Gen	No
Lavant	Unenclosed	PW	No
Knapp Farm	?	PW	No
Westhampnett*	Unenclosed	PW	NZA-16702 2730 +/-70 1030-790 cal BC NZA-16703 2703+/-45 920-800 cal BC
Climping*	Unenclosed	PW	No
Ford	Unenclosed	PW(mostly)/Dev-Dec	BETA-144445 2820+/-60 1100-820 cal BC BETA-144446 2800+/-60 1120-820 cal BC
Westergate	Unenclosed	Gen	No
Selsey Golf Links	Unenclosed	PW/Dec	No

Key PW=Plain Ware Gen=General

All sites containing Post-Deverel-Rimbury pottery are unenclosed with the exception of Plumpton Plain and sites described as ‘hill forts’. This appears to be a county wide phenomenon. The builders of the Late Bronze Age cross ridge dykes seem to have unopposed control.

10.9 Conclusion

The Middle Bronze Age in Sussex appears to be in a state of flux. Conflicts of power were developing between the traditional kin-based groups and the newer production based groups. Climate change and/or soil erosion provoked competition for resources. This seems to take the form of aggressive land acquisition during the Middle Bronze Age. Areas with the topography to contain larger field systems and an adoption of co-operation between sites appear to be in the ascendant. Areas that have succumbed to outside forces then appear to be abandoned with very little Late Bronze Age activity, where it is possible that people returned to a nomadic herding lifestyle. Certainly there appears to be a change from arable to pastoral subsistence at this time, possibly due to climate change or political system. The annexing of some sites by cross ridge dykes which appear to hinder or stop access to the rivers and the Weald from these sites in the Late Bronze Age, may just be territorial borders of larger areas (Figure 10.5).

The proliferation of coastal plain sites could be a response to an increase in river-borne trade with access restricted to some. However the encirclement of Black Patch and Kingley Vale is hard to accept as an accident. At Black Patch both the settlement sites and the barrows are encircled but at Kingley Vale it is just the barrows. It might also in these cases be showing mastery over these old sites and possibly old religions by the new landholders. The early part of the Late Bronze Age would seem relatively stable and under firm control, given that all but one of the known sites were unenclosed.

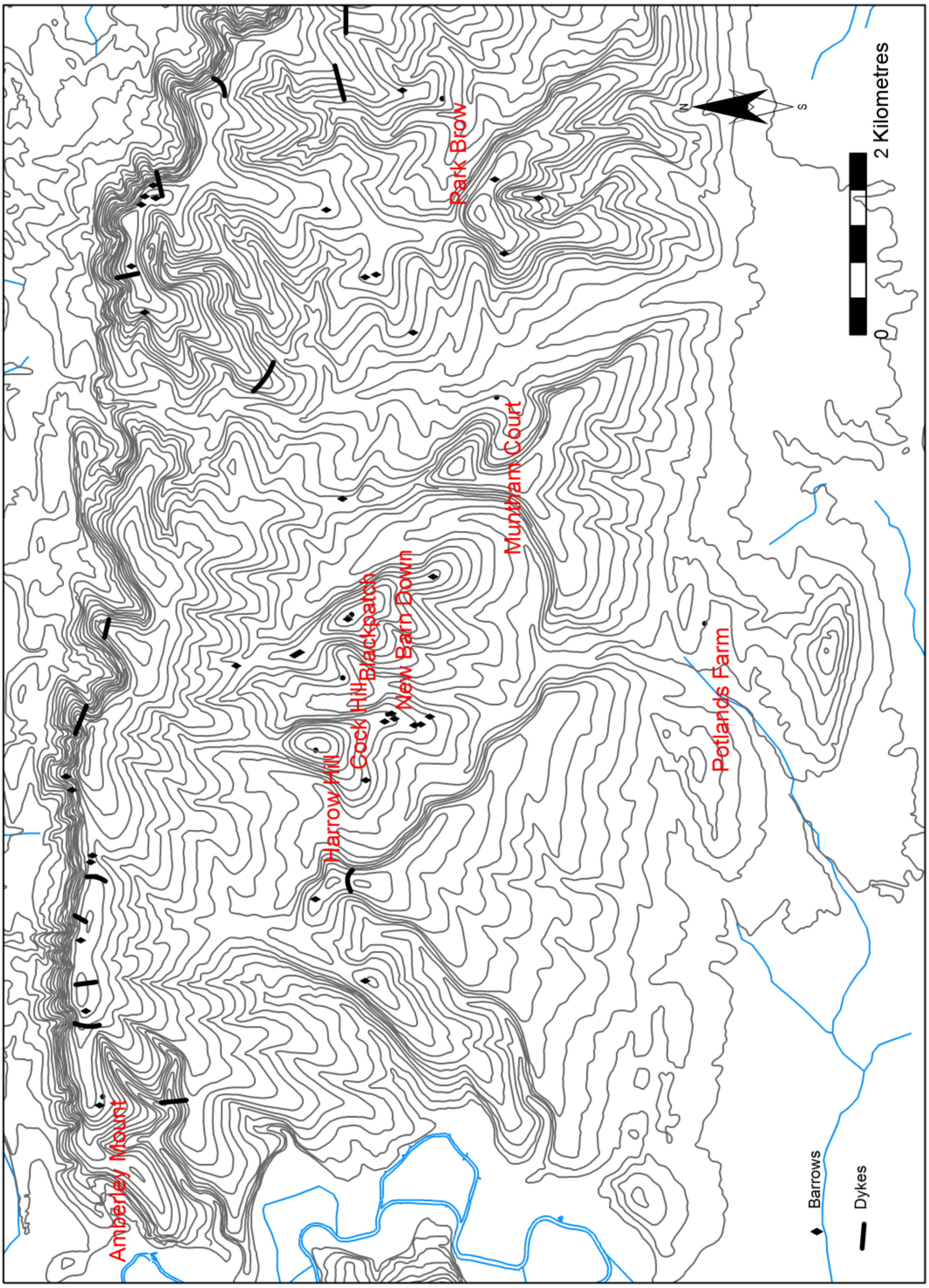


Fig. 10.5 Cross ridge dykes on the scarp slope

Chapter 11. Area comparisons

11.1 Introduction

It is well beyond the scope of this work to study in depth the surrounding areas. The overall themes of the study will be examined in Wessex, the Thames Valley and North Western France, comparing them to Sussex and in particular the Sussex Downs. There will then be a discussion followed by conclusions.

11.2 Wessex

The Wessex chalk lands were, like the Sussex Downs, covered in loess (Figure 9.4). Erosion of these soils may have started earlier than in Sussex during the Late Neolithic/Early Bronze Age. Beaker graves like the 'Amesbury Archer' appear as early as the 24th century BC and 'Wessex 1' graves by 2050 BC. These graves were rich inhumations and contained ornaments of gold, shale, amber and jet. This continued into the Wessex 2 period (1700-1500 BC) where cremation took over from inhumation and the influence of Beaker Culture diminished. An association with Brittany in Wessex 1 and Central Europe in Wessex 2 has been suggested by Bradley (1984, 87-8). During this period, Wessex was not only wealthy but had established strong long distance relationships.

The amount of manpower involved in building large monuments has already been discussed (Chapter 9. Synthesis). The construction of Stonehenge IIIa , the erection of the sarsen stones, circa 2100 BC required an estimated workforce of 600 (Startin 1982, 155). Organisation of this size would require the occurrence of what Johnson and Earle (2000, 265-6) would call a hierarchical simple chiefdom. They state 'Within chiefly hierarchies, a ruling aristocracy occupies local and regional offices with generalised responsibilities in social, political and religious affairs. Community chiefs act much like local leaders but they are responsible for activities that articulate with the regional polity. Regional chiefs coordinate and direct a wide range of activities, from warfare to ceremonies, that cut across local communities and chiefly offices form reinforcing chains of status wielding authority and power'. Although Barrett (1994), has suggested religion as the cohesive force in these chiefdoms, the expansion into and erosion of soils in peripheral parts of Wessex (Bradley 1991, 55) implies competitive interaction (Earle 1991, 2002).

Whatever the basis of power by the mid-second millennium BC, increasing demands and decreasing climatic conditions caused the 'entire system to give way' (Bradley 1991, 55).

Coherent territories became defined by longer boundaries in a chronology that is not fully understood. However Bradley *et al.* (1994, 149-52) feel that these boundary ditches preceded field systems and in some cases eradicated them. This implied no great pressure on land at this time. McOmish *et al.* (2002, 53) place the development of field systems as being 'contemporary with Deverel-Rimbury pottery roughly between 1500 and 1000 BC' and cite instances of field systems being slighted by linear ditches at Snail Down, the Bulford Ranges and Tidworth, all in Wiltshire. Roundhouses were built such as those at Thorney Down, Wiltshire (Stone 1941), Shearplace Hill, Dorset (Rahtz and ApSimon 1962) and South Lodge, Dorset (Barrett *et al.* 1991). These sites could be enclosed or unenclosed and some were positioned in field systems. The size of the estates seems too large for the settlement sites found in them (Bradley 1991, 56). The landscape now appears to be made for subsistence farming rather than a setting for monuments. It has also been reorganised by field systems and linear ditches to show a new and different control system, one that is relatively smaller and more localised, with access to more fertile lands possibly restricted. The struggle between the established order and competitive chiefdoms might have taken longer than Bradley envisaged and was possibly the adaptation of the existing power structure of large kin-based chiefdoms to smaller more competitive local group systems.

11.3 The Thames Valley

Early monumentality in the Thames Valley was on a smaller scale than in Wessex. However climate conditions (heavier rainfall and a colder climate) may have increased fertility by downstream movement of nutrient rich silts. Settlements on high ground were mostly abandoned by 1000 BC. Soil erosion at lower levels was not the problem experienced in other parts of Southern England (Wileman 2009, 87). Field systems and a few linear ditches are dated to the Middle Bronze Age.

This area became richer as the Wessex region began to turn in on itself. Yates (2007, 2-3) argues that the Middle and Lower Thames were well placed to benefit from both intensified agriculture on the river terraces and long distance exchange networks. He has identified a number of settlement clusters along the River Thames. These clusters quoted in Wileman (2009, 76) as at ‘Lechlade, Willingford, Reading, Windsor /Maidenhead, Staines/Heathrow, Carshalton/River Wandle, along the River Lea, Hornchurch, Mucking and along the shores of the Thames estuary’. These clusters are closely associated with metal work finds (Figure 11.1). The development of clusters of sites is an indication of possible territoriality and stratification of society.

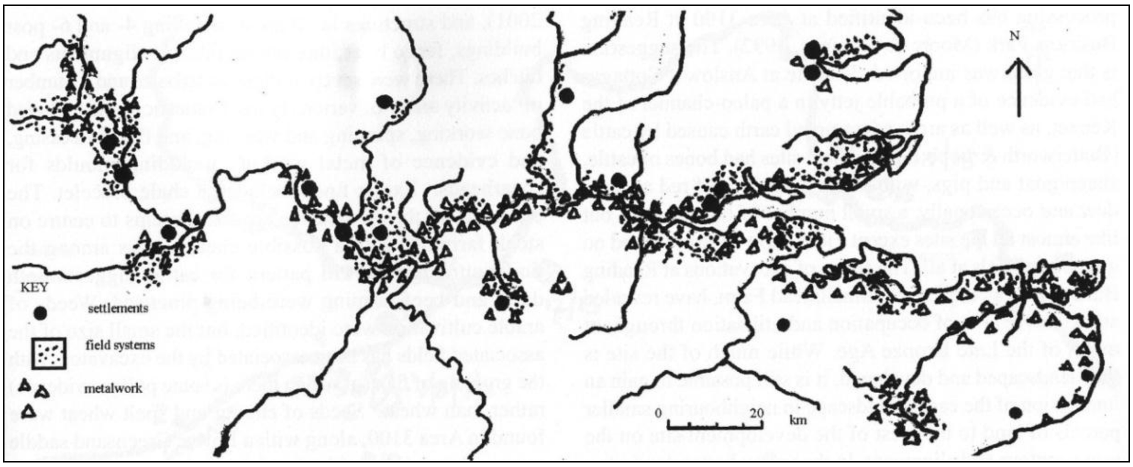


Fig. 11.1 Later Bronze Age metalwork, fields and settlements along the Thames Valley. After Yates 2007,112 adapted by Wileman 2009 Figure 12

11.4 North West France

There are similarities in architecture, pottery and metal work style on both sides of the Channel (Figure 11.2). The picture is very similar to Sussex with barrows enclosed and unenclosed settlements, although there are fewer field systems and Deverel-Rimbury type pottery. However, about 1300 BC, the area was taken over by the RFSO culture (Rhin-Suisse-France-Oriental) (Blanchet 1984), making later comparisons difficult as the two cultures merged. Whilst possibly being slightly later, the resultant Post-Deverel-Rimbury plain ware is remarkably similar to the southern English version.

11.5 Discussion

There is a great deal of similarity and unity in the way these areas react to outside stimuli whether man-made or natural. The arrival of the Beaker Culture and the reaction to climate change appear dissimilar. Bronze Age society adapted to both. The adoption of Beaker Culture, Deverel-Rimbury and Post-Deverel-Rimbury plain ware pottery was almost universal, with similar outcomes across all regions. The adaptation to climate change depended on the topography, geology and political system. All societies adapted to a worsening climate by intensifying agricultural production.

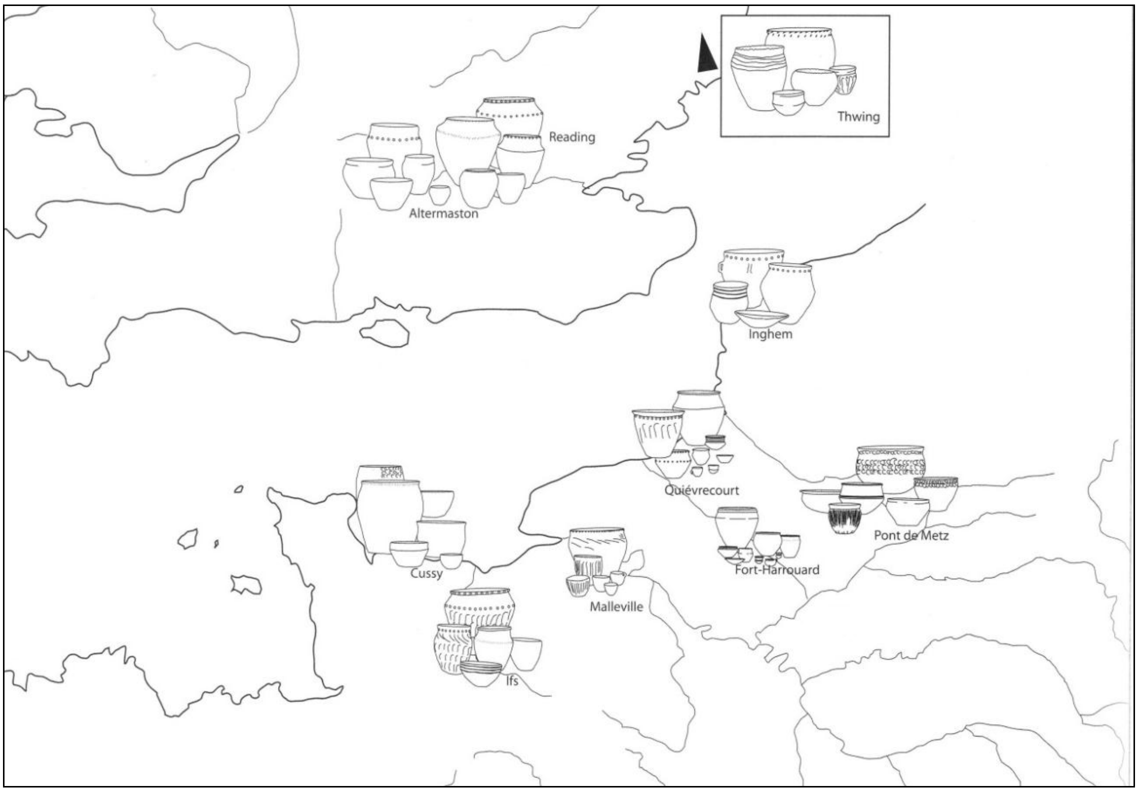


Fig. 11.2 Post-Deverel-Rimbury pottery from both sides of the channel. After Bourgeois and Talon 2009, fig 3.18, 57

In Sussex and Wessex, this in itself was insufficient. In Sussex, territoriality amongst 'local groups' appears by the last part of the Middle Bronze Age and seems to continue into the first part of the Late Bronze Age. In Wessex, which already had large territories, ditches were built to show ownership. These then appear to have broken down, with more fertile land being appropriated by smaller groups. They appear to have used Deverel-Rimbury pottery for 300 years after it disappears in other regions. In both Sussex and Wessex, the enclosed areas seem to be too big for the settlement sites, implying that an alternative to settlement life, nomadic herding was practiced throughout the period.

In the Thames Valley, even though people had probably profited by climate change, they still pursued a policy of agricultural intensification forming clusters of sites reminiscent of the areas in Sussex between the Ouse and the Arun. Wileman (2009) looked for signs of warfare in this period and, whilst there were quite a few, she concluded the case for warfare was unproven. However, the Thames Valley used its new found wealth to facilitate the trade/exchange within prestige groups. This is also true, although probably to a lesser extent, in Sussex.

The possible introduction of linear boundaries as early as the Middle Bronze Age in both Wessex and the Thames Valley must throw some doubt on the acceptance of the belief that all cross ridge dykes in Sussex are dateable to the Late Bronze Age and built for the same purpose.

11.6 Conclusion

Despite its starting position of wealth and a topography that encouraged agriculture and large territories in a period of benign weather, these apparent advantages contributed to Wessex's downfall as the climate worsened. Whilst the Thames Valley with its apparent earlier disadvantages of poor fertility and narrow river terraces was able, with the help of improving fertility, to replace Wessex as the major beneficiary in the trade/exchange of prestige goods. It did this by and increasing co-operation and territoriality around newly fertile areas.

Chapter 12. Final Thoughts and Recommendations for Future Work

The holistic approach of using a suite of archaeological techniques and theories and working up from artefact and site level to regional level has enabled an overall picture of the Bronze Age to be painted. Not only has it indicated the responses to human and natural phenomena but also to daily life.

It has enabled the three research questions to be answered.

1) *Why were these areas chosen for settlement?*

Long human association with the block of Downland from the Mesolithic for both practical and ritualistic reasons had formed strong kinship ties, possibly aligned to later land ownership, plus the suitability of the underlying soil type, loess, for the adoption of agricultural farming techniques, possibly imported from Europe where similar soils are farmed.

2) *What caused their abandonment?*

Climate change caused further stress on a system based on agricultural over-production used for the acquisition of prestige goods, where kinship groups vied for power with new producer groups. This eventually led to the invasion of the Black Patch area by stronger outside groups causing the sites to be abandoned by the original inhabitants.

3) *What can we learn about the life of the people associated with the settlements?*

Sedentary mixed farming and nomadic herding existed side by side in co-operation. Groups were tied to each other by kinship relations or other obligations. Superstition appeared to play a large part in their lives. Intensification and over-producion of agricultural farming required hard work and methodical methods, meaning that the people were not only superstitious but also very practical. Imported prestige objects were highly prized, leading to a quest for power and the possible emergence of a 'Big Man' society to rival the traditional kinship-based power structure.

This picture is obviously open to disagreement and discussion but the ideas contained in the picture are inwardly coherent.

For example, the inability to be able to find activity areas from artefact depositions mirrors the findings of other studies, particularly the work of Johnson *et al.* (2008).

However some patterns of artefact deposition occur so regularly, such as pottery and fire-cracked flint, that they have relevance and require investigation. The use of scientific and ethnographic investigation into hearths has not only shown an alternate interpretation of heating, lighting and cooking but also thrown doubt on perceived cosmological models.

The case for the existence of on-site ponds has been increased by scientific investigation as has that for collection of dung. Ethnographic techniques have looked at crop husbandry and combined with experimental archaeology, have explained carbonised crop depositions and calorific production levels. This knowledge, combined with survey techniques and existing data, has shown levels of overproduction, suggesting that both non-sedentary and sedentary lifestyles existed contemporaneously. Phenomenology and topography have looked at the defensibility of sites. Climatology, geology and topography were combined with ethnography to explain political systems and their evolution both on a local and regional basis.

Further work needs to start at excavation level and work up.

- Three dimensional artefact plotting should be the norm to interpret distribution patterns.
- Features with fire-cracked flint and charcoal need on-site scientific analysis, including colour patterning of fire-cracked flint or stone recorded *in situ* to understand better the purposes of the feature. This needs to be done across small (hearth) to large (burnt mound) features.
- A re-evaluation of the county’s metalwork hoards and finds needs to be undertaken in the wake of Needham’s (1996) re-evaluation of chronologies.
- Further survey work needs to be undertaken on the dating, positioning and form of cross ridge dykes and their relationship to local topography in an attempt to fully understand their age, different typologies and possible usage.
- Similarities in the cultures of North West France and Sussex (in particular the furthest eastern block of Downland that contains Fore Down and Shinewater) need to be further investigated. There is a slight east-west directional feel in trading patterns in this research and if the Black Patch block was politically annexed and virtually empty, were there territorial links between North West France and Eastern Sussex?

The holistic approach to archaeological problems has given a wide suite of tools to look for possible solutions both at site level and regional levels. This has been somewhat hindered by excavation strategies that are either too narrow or dated in their approach. Scientific excavation techniques and analysis should be encouraged wherever possible, as should landscape survey, in an attempt to solve problems of dating, phasing and contemporeity, particularly given the flatness of the radiocarbon curve around this period.

The results of this research are important as they have provided viable alternatives to existing ideas, whilst strengthening the case for others and created a platform for new research ideas to be generated.

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University of Sussex

Middle and Late Bronze Age Settlement on the South Downs: the case study of Black Patch, East Sussex.

BY

Richard Quinn Tapper

Volume 2

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Gazetteer of Later Bronze Age Sites in Sussex

1) Amberly Mount TQ 0427 1235

Excavators (Dates)
H.B.A. and M.M. Ratcliffe-Densham (1957)

References
Ratcliffe-Densham, H.B.A. and Ratcliffe-Densham, M. M. 1966. **Amberly Mount; Its Agricultural Story from the Late Bronze Age**. *S.A.C.* **104,** 6-25.

Topography - South-Eastern side of southerly facing spur of South Downs

Environmental evidence - None

Field systems - Surround Site originally 35ha or greater

Soil - Holaster planus chalk with a capping of tertiary debris

Neolithic remains - None

Barrows - 2 surviving, above Site

Dykes - None

Routes - None

Hoards/finds - None

Phasing - Use into Romano- Brit

Resources - Modern pond on top of ridge

Raw materials - The Sea, The Weald

Site Details

Type - Unenclosed

No. of huts/platforms - Minimum of two located in the corners of fields

No. of enclosures - None

Size - Unknown

Radiocarbon dates - None

Amberly Mount Hut Design

Hut/Hut Platform	**Plan**	**Shape**	**Porch?**	**Facing**	**Int. Size m m^2**	**Ext Size**	**Notes**
Hut 1	Single post ring	Oval	No	S.E.	4.5x5 17.7		Situated in corner of field
Hut 2	Single post ring ? central post	Round	No	S.E.?	9.5 71.0		Situated in corner of field

Amberly Mount Finds

Roof Supports								
Hut 1 Artefacts	1	2 P.B.C.	3 P.C.	4 C	5 P.C.			
Hut 2 Artefacts	1 P.	2 P.	3 P.	4 P.	5 BF.	6 P.	7	
Internal Features.								
Hut 1 Artefacts	Pit C.B.F.BF.P.							
Hut 2 Artefacts	Pit 1. P.C.B.BF.	α BF.	β C.F.Sh.P.	γ	Pit 2 C.BF.B.S.Sh.P.			
Floor								
Hut 1 artefacts	S.P.F.C.BF.Sh. BC.							
Hut 2 Artefacts	C.BF.B.S.Sh.P. BC.							

2) America Wood TQ 134 164

Excavators (Dates)
Priestley-Bell, G. (1993)

References
Priestley-Bell, G. 1994. Archaeological excavations at America Wood, Ashington, West Sussex, *S.A.C.* **132**, 33-51

Topography - Top of Hill

Environmental evidence - None

Field systems - None

Soil - Weald Clay

Neolithic remains - None

Barrows - None

Dykes - None

Routes - None

Hoards/finds - None

Phasing - None

Resources - None

Raw materials - Unknown

Site Details

Type - Possible enclosure

No. of huts/platforms - Unknown

No. of enclosures - One ?

Size - 16m x 12m ? 154 m²

Radiocarbon dates - None

Hut design - Unknown

America Wood Finds

Postholes Defining Half of Oval Enclosure Artefacts	117 F.P.	123 P.	124 F.P.	351 BF.	358
External Features Artefacts	190 S.	188 P.S.	87 P. and/or F.	197 P. and/or F.	68 P. and/or F.
Layer 218 Artefacts	P.F.				

3) Black Patch TQ 495 086

Excavators (Dates)
Drewett, P.L. (1977-80)
Tapper, R.Q. (2005-08)

References
Drewett, P.L. 1982. Later Bronze Age Downland Economy and Excavations at Black Patch, East Sussex. *P.P.S.* **48**, 321-400.

Topography - Spine and southwestern side of gently sloping southerly facing downland spur

Environmental evidence - None

Field systems - Surrounds site

Soil - Now calcareous formerly some covering of loess

Neolithic remains - Neolithic axes (one polished) Mesolithic core found in close proximity during field walking. Neolithic Site of Hobbs Hawth 1 km. along valley bottom

Barrows - 11 surround site**.** Numerous on other nearby sites - ridges

Dykes – Surround site to the north, east and south

Routes - South Downs Way

Hoards/finds - None

Phasing - None

Resources - Modern Ponds near site. River - 48 Mins. Spring - 34 Mins. Sea - 95 Mins.

Raw materials - Unknown

Site Details

No. of huts/platforms - 4+

No. of enclosures - 2

Size - Unknown

Radiocarbon dates - HAR-2939 2780+/- 80BP, HAR-2940 3020+/- 70BP, HAR-2941 2790+/- 70BP, HAR-3735 2970+/- 80BP, HAR-3736 3080+/- 70BP, HAR-3737 2850+/- 70BP

Black Patch Hut Design

Hut/Hut Platform	**Plan**	**Shape**	**Porch?**	**Facing**	**Int. Size m m^2**	**Ext. Size m^2**
Hut 1 HP1	Single post ring	Round	No	S.E.	6.6 34	41
Hut 2 HP1	Single post ring	Round	No	S.E.	5.1 20	28.5
Hut 1 HP4	Single post ring	Round	Yes	S.E.	6.6 34	50.5
Hut 2 HP4	Single post ring	Round	Yes	S.E.	4.0 12.5	24
Hut 3 HP4	Single post ring	Round	Yes	S.E.	6.4 33	50
Hut 4 HP4	Single post ring	Round	Yes	S.E.	6.6 34	44.5
Hut 5 HP4	Single post ring	Round	No	S.E.?	3.7 10	19.5
Hut A HP3	Double post ring	Round	No		7.2 40.7	
Hut B HP3	Single post ring	Round	No		4.5 18.9	
Hut C HP3	Single post ring plus central support	Round	No?		7.6 45.3	

Black Patch Plat 1 Roof Supports											
Hut 1 Artefacts	8 P.F.	9 S.	27 Nil	25 Nil	26 Nil	23 Nil	22 Nil	47 Nil			
Hut 2	102 Nil	19 Nil	77 Nil	15 Nil							
Entrance Porches											
Hut 1	113 Nil										
Internal Features Containing Artefacts											
Hut 1 Artefacts	12 P.F. L.G.										
Large External Features Containing Artefacts											
Artefacts	13 P.F.	50 F.	55 F.	56 P.F.	100 P.						
Cremation	110 CB.P.										
Misc. External Features Containing Artefacts											
Artefacts	101 P.	81 P.									
Black Patch Plat. 4 Roof Supports											

Hut 1 Phase 1 Artefacts	129 Nil	193 S.	199 Nil	194 Nil	303 Nil	144 Nil					
Hut 1 Phase 2 Artefacts	128 Nil	130 F.	131 P.	133 Nil	134 Nil	136 F.	302 Nil	151 F.	135 F.		
Hut 2 Artefacts	99 Nil	93 Nil	87 Nil	88 Nil	86 Nil	85 Nil	94 S.	96 Nil			
Hut 3 Artefacts	49 F. L.	84 Nil	79 F.	62 F.P.	64 F.P.	46 Nil	43 Nil				
Hut 4 Artefacts	058 P.	086 P.S.	088 P.S.	082 Nil	069 Nil	070 Nil	071 Nil	072 Nil	073 Nil		
Hut 5	041 S.	042 Nil	044 Nil	054 Nil	048 S.P.F.	046 F.					
Entrance Porches											
Hut 1 Phase 2	152 F.	153 F.	154	162							
Hut 2	222 F.	224 L.	215 Nil	216 F.	221 Nil	223 S.	219 F.L.	226 Nil	225 L.	218 L.	
Hut 3 Artefacts	75 Br.B.P. S.P.L	41 P.L. F.	40 P.F	80 P.							
Hut 4 Artefacts	094 Nil	063 Nil	064 F.	060 F.							
Hut 5 No Porch Identified											
Internal Features Containing Artefacts											
Hut 1 Artefacts	132 F.S.	135 F.	156 F.	161 P.	148 F.P.S.	151 F.	147 S.	195 P.	160 P.		

Hut 2 Artefacts	217 L.	218 L.	219 L.	94 S.							
Hut 3 Artefacts	207 P.F.	50 F.Br. P.L.G.	211 F.	47 P.F.	49 F.	42 P.F.	57 P.F.	79 F.	67 P.	7 F.P. L.	204 P.
Hut 3 continued Artefacts	82 F.L. P.G.	83 F.P. G.									
Hut 4 Artefacts	091 F.	093 F.	090 F.L.P.	081 F.							
Hut 5 Artefacts	040 F.										
Large External Features Containing Artefacts											
Feature Artefacts	106 L.P.F.	102 L.P.F	103 P.								
Postholes Forming Fence lines											
Fence 1 Artefacts	229 Nil	227 F.	74 F.	12 F.	11 F.	10 F.	9 F.	52 Nil	037 F.	036 Nil	015 Nil
Fence 1 continued Artefacts	014 F.	013 Nil	024 F.	023 F.	012 Nil	05 P.	012 Nil	022 F.	021 F.	010 F.	019 F.
Fence 1 continued Artefacts	09 P.	033 P.									
Fence 2 Artefacts	73 Nil	72 Nil	19 Nil	201 Nil	18 Nil	71 F.	17 F.	16 Nil	15 F.	025 F.	016 F.

Fence 2 continued Artefacts	038 F.	018 Nil	039 Nil	098 Nil	059 Nil						
Fence 3 Artefacts	233 F.	14 P.	20 L.	21 S.	25 Nil	203 Nil	26 F.P.	27 F.	29 Nil	54 Nil	030 Nil
Fence 3 Continued Artefacts	033 Nil	37 F.	38 F.	45 F.							
Fence 4 Artefacts	175 Nil	174 P.	118 Nil	119 Nil	137 Nil	126 Nil	121 Nil	122 Nil	128 Nil	124 Nil	125 Nil
Fence 5 Artefacts	138 Nil	116 Nil	114 F.	139 Nil	112 F.	111 Nil	110 Nil	109 Nil	108 P.	120 Nil	
Possible Fence on Western Edge of Site Artefacts	140 P.F.	141 F.	92 Nil	142 F.	143 Nil	178 Nil	144 Nil				
Misc. ext. Features With Artefacts Artefacts	180 F.	45 P.	31 P.F.	34 P.F.	38 F.	39 F.	51 F.	6 F.	07 F.	03 F.	029 F.
Misc. ext. Features With Artefacts Continued Artefacts	020 F.										

Black Patch 2005-6 Finds

Roof Supports											
Inner Ring											
Hut A	287	201	2279	2303	299						
Artefacts	F.	P.BC.	F.FC.	LW. AF.	B.						
Outer Ring											
Hut A	285	231	193	195	197	279	149	169	2277	2287	2297
Artefacts	F.	Nil	F.	F.	F.	P.	P.F.BC. FC.	Nil	F.	AF. FC.	FC.
Hut B	2151	293	237	203	139	165	207	295	165		
Artefacts	Nil	Nil	F.FC. M.	F.FC.	Nil	Nil	C.F.	Nil	Nil		
Hut C	2249	2123	2129	2149	2105	2275	2243	2273	211		
Artefacts	Nil	Nil	Nil	FC.	BC. C.F.	Nil	Nil	Nil	Nil		
Entrance Porches											
Hut A											
Artefacts											
Hut B											
Artefacts											
Hut C	2251										
Artefacts	FC.										
Internal Features Containing Artefacts											
Hut A	2307	2297	303.	2283							
Artefacts	AF.	FC.	FC.	F.							
Hut B	297	175									
Artefacts	F.FC.B.P LW. BC.M.	F.									

Hut C Artefacts	2121 C.F.P.	2117 BC.F.FC.	2153 BC.F.FC,	2159 M.	2173 FC.P.	2293 F.	2125 P.FCF. S.B.				
Large External Features Containing Artefacts											
Feature Artefacts		233 B.F.FC.S.	2317 F.P.	229 C.F.FC.							

4) Blackpatch TQ 094 088

Excavators (Dates)
H.B.A. and M.M. Ratcliffe-Densham. (1950?)

References
Ratcliffe-Densham, H.B.A. and Ratcliffe-Densham, M.M. 1952. A Celtic Farm on Blackpatch, *S.A.C.* **91**, 69-83

Topography - Top of Southerly orientated spur of the South Downs

Environmental evidence - None

Field systems - Surround Site

Soil - Unknown

Neolithic remains - Nearby Flint Mines of the same name

Barrows - Nearby

Dykes - None

Routes - None

Hoards/finds - None

Phasing - None

Resources - None

Raw materials - Unknown

Site Details

Type - Enclosure

No. of huts/platforms - Minimum of one

No. of enclosures - One

Size - 50m x30m.

Radiocarbon dates - None

Blackpatch Hut Design

Hut/Hut Platform	**Plan**	**Shape**	**Porch?**	**Facing**	**Int. Size** **m** **m²**	**Ext. Size**	**Notes**
Hut 1 Cutting one	Single post ring	Round	Yes?	S.E.	7.0 38.5	Unknown	None

Blackpatch Finds.

Roof Supports **Hut 1** Cutting 1 Artefacts	1 BF. F.	2 BF. F. P.	3 BF.F. C.	4 BF.F. C.	5 BF.F.	6 BF.F. C.P.	7 BF.F. P.	8 BF.F.
Internal Features Artefacts	10 S.P.C.F.							
Floor Artefacts	BF.P.F. Skeleton of complete lamb or kid							
External Features Artefacts	9 BF.P.							
Bank Artefacts	P. Evidence of hedge							
Cutting VI Pond Artefacts	Multi period P Human Tooth Roman nail and small sheet Br. B.Sh. F.C.S. Some hundreds of BF.							

5) Carne's Seat SU 8876 0945

__Excavators__ (Dates)
Holgate, R. (1984)

__References__
Holegate, R. 1986. Excavations At the Late Prehistoric and Romano- British Enclosure Complex at Carne's Seat, Goodwood, West Sussex, 1984. *S.A.C.* **124**, 35-50

Topography - South-west facing slope on southern edge of the South Downs

Environmental evidence - None

Field systems - None

Soil - Unknown

Neolithic remains - None

Barrows - None

Dykes - None

Routes - None

Hoards/finds - None

Phasing - Iron Age and later site containing residual Late Bronze Age pottery in various levels of ditch fill

Resources - None

Raw materials - Unknown

__Site Details__

Type - Banjo Enclosure

No. of huts/platforms - Unknown

No. of enclosures - Nil

Size - Unknown

Radiocarbon dates - None

6) Castle Hill TQ 003 045

Excavators (Dates)
Field, L.F.

References
Field, L.F. 1939. Castle Hill, Newhaven, *S.A.C.* **80**, 263-268

Topography - Hilltop on edge of cliff

Environmental evidence - None

Field systems - None

Soil - Unknown

Neolithic remains - None

Barrows - None

Dykes - None

Routes - None

Hoards/finds - None

Phasing - None

Resources - None

Raw materials - Unknown

Site Details

Type - Unknown

No. of huts/platforms - Unknown

No. of enclosures - Nil

Size - Unknown

Radiocarbon dates - None

7) Charlston Brow TQ 47 07

Excavators (Dates)
Parsons, W.J. and Curwen, E.C. (1928)

References
Parsons, W.J. and Curwen, E.C. 1933. An agricultural settlement on Charlston Brow near Firle Beacon, *S.A.C.* **74**, 164-180.

Topography - Northern Site lies near top of southwest orientated spur of the Downs. Southern site lies some 280m to the south downslope along the same spur.

Environmental evidence - None

Field systems - Sites connected by double lyncheted track way that respects southern site's field system. Appears to cut through smaller field system of northern site but lynchets from trackway and field system do not quite abut.

Soil - Unknown

Neolithic remains - None

Barrows - None

Dykes - None

Routes - South Downs Way

Hoards/finds - None

Phasing - None

Resources - River - 63 Mins. Spring - 32 Mins. Sea - 102 Mins.

Raw materials - Unknown

Site Details

No. of huts/platforms - Southern Site - 1 rectangular. Northern Site - At least one

No. of enclosures - Southern Site – None. Northern site - One

Size - 30m x25m

Radiocarbon dates - None

Charlston Brow Hut Design

Hut/Hut Platform	**Plan**	**Shape**	**Porch?**	**Facing**	**Int. Size**	**Ext. Size**	**Notes**
Southern Site	Low dry stone walls	Oblong	None discernable	S.E. ?	6m x 4m 24m²		
Northern Site	?	Irregular	?	?	?		

Charlston Brow Finds

Internal Features	
Southern site Hut Floor	Br. S. B. P. F. B.F. L.W? Sh.
Northern Site Hut	P.Ir.Br. Coins B. CBM(Roman) S.
External Features	
Southern Site Pit	BF.
Northern Site Pit 1	P. Ir slag. Ir. B.F. B. Br.
Northern Site Pit 3	P.B.Sh.S.
Northern Site Pit 4	P.Ir. Br. Coins.B. CBM (Roman) S. F. B.F.
Northern Site Pit 5	F.LW. S. BF.B.

8) Cock Hill TQ 089 097

<u>Excavators</u> (Dates)
Ratcliffe-Densham, H.B.A. and M.M. (1952-7)

<u>References</u>
Ratcliffe-Densham, H.B.A. and Ratcliffe-Densham, M.M. 1961. An Anomalous Earthwork Of The Late Bronze Age, On Cock Hill, Sussex. *S.A.C.* **99**, 78-101

Topography - Valley between two downland ridges, Blackpatch Hill to east and Harrow Hill to west. New Barn Down is situated on the south-eastern slope of Harrow Hill

Environmental evidence - None

Field systems - Nearby

Soil - Unknown

Neolithic remains - Flint Mines at Blackpatch and possibly Harrow Hill

Barrows - Above site to east

Dykes - None

Routes - None

Hoards/finds - None

Phasing - None

Resources - None

Raw materials - Unknown

<u>Site Details</u>

Type - Ditched and Banked Enclosure. The bank being outside the ditch

No. of huts/platforms - Three

No. of enclosures - One

Size - App. 52m diameter

Radiocarbon dates - None

Cock Hill Hut Design

Hut/Hut Platform	**Plan**	**Shape**	**Porch?**	**Facing**	**Int Size m m²**	**Ext Size**	**Notes**
Hut 1	Single post ring	Round	No	South?	6.5 32.2		
Hut 2	Single post ring Central support	Round	Poss. large veranda to south 2m x 3m	South	6.5 32.2 +6?		
Hut 3	Single post ring Central support	Round	?	South-east	5.2 21.2		Poss. part floored by flint cobbles

Cock Hill Finds

Roof Supports			
Hut 1 Artefacts	Three unrecorded P.	Three unrecorded C.	One unrecorded S.
Hut 2 Artefacts	Unrecorded S. P. B. BF.		
Hut 3 Artefacts	Eight unrecorded P.	Two unrecorded S.	
Internal Features			
Hut 1 Artefacts	P.V. P. LW. F.B.S.Sh.C.	C1. At least 3 cremations young adult, child under 12 and infant P. C.	
Hut 3 Artefacts	P.VII. Many BF.P.C.		
External Features			
Hut 1 Artefacts	P.VI. F.		
Floors			
Hut 2 Artefacts	P.S.B.BF.		
Hut 3 Artefacts	P.S.B.BF.		
Other External Features			
Assemblage 1 Artefacts	Surface. P.BF.	Unidentified postholes P.	
Fence 2 Artefacts	Unidentified postholes P.		

C111 Artefacts	At least two cremations one adult and one child. P.		
Pit 11 Artefacts	P.		
Assemblage 111 Artefacts	Floor P.	Unidentified postholes P.	
C11 Artefacts	Two cremations one adult and one child. P.		
Pit 1X Artefacts	F.		
Pit X Artefacts	F.		

Pond Artefacts	Multi- dated P. Human foetus.		
Ditch Artefacts	BF.C.Sh.P.B.HB.Br. S.		
Bank Artefacts	P.BF.B.C.		
Features Outside Bank and Ditch			
Pit X1 Artefacts	Multi-period P.B.F.BF.		
Pond 11 Artefacts	P.C.B.BF.		
Pit X111 Artefacts	P.BF.		
Hearth Artefacts	Beaker P.B.BF.		

9) Denton Hill TQ 478 025

Field Walked
Bell, M.G. 1973-4 as part of Bishopstone Project

Reference
Bell, M.G. 1974. *Field Survey-Christmas 1973-4. Bishopstone Leaflet No.10*

Topography - Located on southern side of Southerly facing Downland spur

Environmental evidence - None

Field systems - Adjacent

Soil - Unknown

Neolithic remains - None

Barrows - None

Dykes - None

Routes - None

Hoards/finds - None

Phasing - None

Resources - None

Raw materials - Unknown

Site Details

No. of huts/platforms - 1?

No. of enclosures - Nil

Size - Unknown

Radiocarbon dates - None

10) Ditchling Beacon TQ 336 185

<u>Excavators</u> (Dates)
Crow, D. A. and Ross-Williamson, R.P. (1929-30)
Rudling, D.R. (1983)

<u>References</u> Crow, D.A. 1930. Excavations at Ditchling Beacon. *S.A.C.* **71**, 259-61
Rudling, D.R. 1985. Trial excavations at Ditchling Beacon, East Sussex 1983. *S.A.C.* **123**, 251-4

Topography - Located on prominent hill

Environmental evidence - None

Field systems - Surround site

Soil - Clay with flints

Neolithic remains - None

Barrows - None

Dykes - None

Routes - None

Hoards/finds - None

Phasing - None

Raw materials - Unknown

<u>Site Details</u>

No. of huts/platforms - Unknown

No. of enclosures - Nil

Size - Unknown

Radiocarbon dates - None

11) Downsview TQ 328 093

Excavators (Dates)
Rudling, D.R. (1990-1992)

References
Rudling, D.R. 2002. Excavations at Coldean Lane. In Rudling, D.R. (ed.) *Downland Settlement and Land-use: The Archaeology of The Brighton By-pass.* University College London Field Archaeology Unit, Monograph **1**.

Topography - South-South Westerly facing steep sided slope of the South Downs.

Environmental evidence - None

Field systems - Surrounds Site. See Holleyman, 1937. Remains of this field system located at Eastwick Barns

Soil - Clay with Flints

Neolithic remains - None

Barrows - Several surrounding site, to the West and Northwest

Dykes - Two. One just to North of site and one to East of site

Routes - None

Hoards/finds - None

Phasing - None

Resources - None

Raw materials - Unknown

Site Details

No. of huts/platforms - Eleven

No. of enclosures - Nil

Size - Unknown

Radiocarbon dates - Oxa-4909 3280 +/- 40BP, Gu-5249 3140+/- 80BP, GU-3530 3170+/-70BP OxA-4811 3110+/- 60BP, GU-5432-3 3003+/- 46BP, UB-3783-6 3198+/- 13BP and OxA-4810 2755+/- 60BP

Downsview Hut Design

Hut/Hut Platform	Plan	Shape	Porch ?	Facing	Int. Size	Ext. Size	Notes
Area A 2046	Single post ring + stake holes	Round/oval Truncated on south	?	S.S.W.	5m 19.7m²		
Area A 2062 Structure 1	Single post ring + stake holes	Round	No	S. or S.S.E.	5m 19.7m²		Bareham reconstruction
Area A 2048 Structure 2	Stake hole + possible windbreak	Round	No	S.S.W.?	2.5m 4.9m²		Bareham reconstruction Dated to L.B.A. by pottery.
Area D 2042 Structure 4	Post hole and stake hole	? Severely truncated	?	?	?		
Area D Structure 5	Post hole	Round ?	Poss.	S.S.E.	4m 12.6m^2		
Area E Structure 6	Post hole	Round?			2m 3.1m²		
Area G 2050 Structure 7	Single post ring	Oval	No	S.E.	6.5m 28.3m²		
Area G 2050 Structure 8	Single post ring + stake holes	Round	No	S.E.	4m 12.6m²		Replaced structure 7 3.6 metres S.E.
Area I 2662 Structure 9	Single post ring+ stake holes	Oval	Yes	S.E.	5m 23m²		
Area J 4003	Single post ring	?	?	?	5m? 19.6m²?		
Area J 4065	Single post ring + stake holes	Oval	Yes	S.E.	5m 23.8m²		

Downsview Finds

Roof Supports									
Area A 2046 Artefacts	2844 Nil	2838 Nil	2840 Nil	2093 Nil	2842 Nil	2091 Nil			
Area A 2062 Artefacts	2196 Nil	2183 Nil	2217 Nil	2201 S.	2181 Nil	2188 Nil	2190 Nil		
Area A 2048 Artefacts	2223 Nil	2226 Nil	2232 Nil						
Area D Structure 4? Artefacts	2162 F.	2179 Nil	2284 Nil	2288 Nil	2291 Nil	2297 Nil	2525 Nil	2527 Nil	2529 Nil
Area D Structure 5? Artefacts	2270 F.	2274 Nil	2280 Nil	2282 Nil	2278 P.				
Area G 2050 Artefacts	2369 Nil	2349 Nil	2347 Nil	2174 Nil	2137 Nil	2141 Nil			
Area G Structure 8 Artefacts	2134 Nil	2132 Nil	2101 Nil	2317 Nil	2315 Nil				
Area I 2262 Artefacts	2418 Nil	2813 Nil	2828 Nil	2802 G.	2817 G.	2391 G.P.			
Area J 4065 Artefacts	4075 P.BF.	4066 P.	4076 BF.	4081 BF.	4073 BF.				
Area J 4003 Artefacts	4012 BF.	4013 BF.							
Entrance Porches									
Area A 2046 Artefacts	2237 Nil	2239 Nil	2235 Nil	2242 Nil					
Area A 2062 Artefacts	2192 Nil	2190 Nil	2188 Nil	2252 Nil					

Area A 2048 Artefacts	2211 Nil	2214 Nil							
Area D Structure 4? No entrance identified									
Area D Structure 5 Artefacts	2523 Nil	2865 Nil							
Area G 2050 Artefacts	2115 P.	2128 Nil							
Area G Structure 8 Artefacts	2313 S.	2105 Nil							
Area I 2262 Artefacts	2404 P.G.	2406 P.G.							
Area J 4065 Artefacts	4068 P.BF.								
Internal Features Containing Artefacts									
Area A 2046 Artefacts	2143 BF.								
Area I Artefacts	2807 P.	2391 P.							
Area J 4065 Artefacts	4069 F.P. BF.	4073 BF.	4080 BF.						
Area J 4003 Artefacts	4015 P.	4024 BF.	4009 BF.	4088 BF.					

Large external Features containing Artefacts									
Area A Artefacts	2053 S.B. F.P. BF.								
Area B Artefacts	2259 S.B. F.P.								
Area C Artefacts	2038 F.P.	2158 F.	2276 F.	2296 B.F					
Area E Artefacts	2437 P.	2430 F.							
Area F Artefacts	2423 B.P.F. Cu.	2425 F.P.B. N.							
Area H Artefacts	2340 P.F.								
Area J Artefacts	4019 BF.	4023 BF.							
Misc. Ext. Features With Artefacts									
Area A 2062 Artefacts	2205 BF.								
Area G Artefacts	2811 P.								

12) Ford SU 995 025

<u>**Excavators**</u> (Dates)
Plaice, C. (1999)

<u>**References**</u>
Plaice, C. 2004. *Excavations at Ford Airfield, Yapton, West Sussex, 1999,* Norfolk, Heritage

Topography - Coastal Plain on brickearth

Environmental evidence - None

Field systems - Co-axial? (See Routes)

Soil - Brickearth

Neolithic remains - Minimal

Barrows - None

Dykes - None

Routes - Two track ways believed to serve a co-axial field system probably for stock to go to summer grazing by the River Arun

Hoards/finds - None

Phasing - Continues into Iron and Romano-British Ages

Resources - River Arun less than 1km from site

Raw materials - Unknown

<u>**Site Details**</u>

Type - Mostly pits and a few randomly situated postholes

No. of huts/platforms - Unknown

No. of enclosures - One

Size - Unknown

Radiocarbon dates - 1100-820cal BC (BETA 144445 2820 660 BP)

Ford Finds

Postholes											
Context Artefacts	603 P.	605 P.	809 P.	819 P.	904 P.	1020 P.	1028 P. BF.	1042 P.	1067 P. BF.	1178 P. BF.	1207 P.
Context Artefacts	1220 P. BF.	1255 P. BF.	1442 P. BF.								
Pits											
Context Artefacts	510 P.	803 P.	817 P.	1063 P. BF.	1058 P. BF.	1104 P.	1111 P.	1116 P.	1127 P.	1136 P.	1137 P.
Context Artefacts	1140 P.	1169 P. BF.	1274 P.	1275 P.	1276 P. BF.	1277 P. BF.	1284 P.	1349 P.	1414 P. BF.	1420 P. BF.	1428 P. BF.
Context Artefacts	1444 P.	1507 P. BF.									

13) Fore Down TQ 540 019

Excavators (Dates)
Budgen, W. (1926-31)
Chuter, G.

References
Budgen, W. 1927, Eastbourne, *S.A.C.* **68**, 285-6
Budgen, W. 1928, Eastbourne, *S.A.C.* **69**, 232
Budgen, W. 1932, Eastbourne, *S.A.C.* **73**, 205
Chuter, G. 1987, A Late Bronze Age Site on Fore Down, Littlington, East Sussex. *S.A.C.* **125**, 234-237

Topography - South-East side of southerly spur of the South Downs

Environmental evidence - None

Field systems - Extensive field systems surround the site

Soil - Unknown

Neolithic remains - None

Barrows - Several to West and North of the site

Dykes - 250m west of site

Routes - None

Hoards/finds - None

Phasing - None

Raw materials – Unknown

Site Details

Type - Unknown

No. of huts/platforms - Min 3?

No. of enclosures - Nil

Size - Unknown

Radiocarbon dates - None

14) Harrow Hill TQ 811 100

Excavators (Dates)
Holleyman.G. (1936)

References
Holleyman, G. 1937. Harrow Hill Excavations, 1936. *S.A.C.*78, 230- 251.

Topography - Hilltop

Environmental evidence - None

Field systems - Nearby

Soil - Unknown

Neolithic remains - Flint mines

Barrows - Nearby

Dykes - None

Routes - None

Hoards/finds - None

Phasing - None

Resources - None

Raw materials - Unknown

Site Details

Type - Enclosure

No. of huts/platforms - Not totally excavated but none found

No. of enclosures - One

Size - 80m x 80m

Radiocarbon dates - None

Harrow Hill Finds

External Features	
Cutting 1 Rampart and Ditch Artefacts	9 F. Axes P. BF.B.
Cutting 11 Main gateway Artefacts	C.
Cutting 111 Rampart and Ditch Artefacts	Roman P.
Cutting V111 Inside Rampart and Ditch Artefacts	Numerous F. Axes. Antlers. Roman coins Nails and Samian P.
Cuttings 1V, V, VI andVII Artefacts	P. B. F.BF.
Shaft 1 Artefacts	3 F. Axes. Antler
Shaft 11 Artefacts	4 F. Axes. F. Antler
Shaft 111 Artefacts	33 F Axes. Ox scapula

15) Heathy Brow TQ 31 12

<u>Excavators</u> (Dates)
Bedwen, O. (1978)

<u>References</u>
Bedwen, O. 1982. The Pre-Roman Iron Age on Bullock Down. In Drewett,P.L. The Archaeology Of Bullock Down, Eastbourne, East Sussex:The Development of A Landscape. *S.A.S*, *Monograph* **1** 73-96

Topography - Saddle between two hills extensive views to East and West?

Environmental evidence - None

Field systems - Nearby

Soil - Clay with flints

Neolithic remains - None

Barrows - None

Dykes - Nearby

Routes - None

Hoards/finds - Beachy Head Bronze Age Hoard

Phasing - None

Resources - None

Raw materials - Unknown

<u>Site Details</u>

Type - Unenclosed

No. of huts/platforms - 2?

No. of enclosures - Nil

Size - Unknown

Radiocarbon dates - None

Heathy Brow Hut Design

Hut/Hut Platform	**Plan**	**Shape**	**Porch?**	**Facing**	**Int. Size m m^2**	**Ext. Size**	**Notes**
Building/hut 16	No visible supports	Oblong	No	?	6x4 24		Well defined by concentrations of pottery, burnt flint, charcoal and sandstone fragments
Building/hut 17	No visible supports	Oval/ round			5 19.6		Well defined by concentrations of pottery, burnt flint, charcoal and sandstone fragments

Heathy Brow Finds

Hut 16 Artefacts	Floor P.BF.S.C.									
Hut 17 Artefacts	Floor P.BF.S.C.									
External Features.										
Depressions Artefacts	15	31 P.	36 P.	52 P. BF.	53 P. BF.					
Post holes Artefacts	23 P.	44 P.	45 P.	14 P.	49 P.	29 P. KimSh. BF.	30 BF.	42 S.	54 S.	56 BF.

16) Hollingbury TQ 322 078

Excavators (Dates)
Curwen, E.C. (1931)
Holmes, J. (1967-9)

References
Curwen, E.C. 1932. Excavations at Hollingbury Camp, Sussex, *Antiquaries Journal.* **XII** No.1, 1- 16
Holmes, J. 1984. Excavations at Hollingbury Camp, Sussex, 1967-9, *S.A.C.* **122**, 29-54
Hamilton, S. Earlier First Millennium Pottery From The Excavations at Hollingbury Camp, Sussex, 1967-9, *S.A.C.* **122**, 55-62

Topography - Top of prominent hill very visible from south

Environmental evidence - None

Field systems - None

Soil - Clay with flints

Neolithic remains - None

Barrows - None

Dykes - None

Routes - None

Hoards/finds - None

Phasing - None

Resources - None

Raw materials - Unknown

Site Details

Type - Enclosure

No. of huts/platforms - At least four

No. of enclosures - One

Size - 4.1 hectares

Radiocarbon dates - None

Hollingbury Hut Design

Hut/Hut Platform	**Plan**	**Shape**	**Porch?**	**Facing**	**Int. Size**	**Ext. Size**	**Notes**
Hut A	Single post ring Central support	Round	Yes	East		12.2m 116.9m²	
Hut B	No post holes	Round	No			4.5m 15.9m²	
Hut C	Single Post ring	Round	No			4.4m 15.4m²	
Hut D	Stone wall	Round	Yes	North-East		4.4m 15.4m²	Replaced Hut C ?
Hut E		Round	No			12m 110.4m²	

Hollingbury Finds

Hut A floor	P.
Hut B floor	
Hut C floor	P.
Hut D floor	LW.
Hut E floor	P.

17) Itford Hill TQ 447 055

Excavators (Dates)
Burstow, G.P. and Holleyman, G.A. (1949-1953)

References
Burstow, G.P. and Holleyman, G.A. 1957. Late Bronze Age settlement on Itford Hill, Sussex. *P.P.S.* **32**, 167-212

Topography - Gentle southern facing Downland slope. 300m south of from the main ridge of the Downs. Commands magnificent views of the Ouse valley and surrounding Downland

Environmental evidence - None

Field systems - 180m. south of site. Interpreted as Roman by excavators as large? amounts of Roman pottery found in vicinity. Longer axis of fields runs parallel with slope

Soil - Unknown

Neolithic remains - None

Barrows - Close-by

Dykes - Cross Ridge Dyke runs for 300m. Separating site from field system

Routes - South Downs Way, River Ouse

Hoards/finds - None

Phasing - None

Resources - River Ouse is 33 Mins. Spring is 23 Mins. Sea is 80 Mins.

Raw materials - Unknown

Site Details

No. of huts/platforms - Five hut platforms

No. of enclosures - Five

Size - Five enclosures and three hut platforms cover 45m x 25m, plus 100m away one platform on/near cross ridge dyke 20m x 10m, plus one damaged platform just south of cross ridge dyke

Radiocarbon dates - Lab No Grn-6167 Date 2950+/- 35 BP Calibrate date range (2 sigma) 1292-1018 cal BC

Itford Hill Hut Design

Hut/Hut Platform	**Plan**	**Shape**	**Porch?**	**Facing**	**Int. Size m m²**	**Ext. Size m m²**	**Notes.**
Hut A Hut Platform 1	Single post ring	Irregular BandH. Round? R.Q.T.	No Yes	S.E.	4.85x 4.85+P 73.8	7.3x6.4 147.3	229mm Overburden No internal porch posts
Hut B Hut Platform 3	Single post ring Central posthole						
Hut C Enclosure 4	Single post ring BandH Central posthole R.Q.T.	Round	No evidence Area appears to be damaged	S.E.?	5.2x5.2 84.9	6.4x6.4 128.6	Central area of trodden chalk Southern side of hut eroded?
Hut D Enclosure 4	Single post ring Central posthole	Round	Yes	S.E.	6.7x 6.7+P 140.9	7.9x7.9 196	Largest hut central area of trodden chalk
Hut E Enclosure 4	Single post ring	Oval	No BandH ? R.Q.T.	S. S.E.	5.8x 4.8+P? 91.6	7.0x8.2 181.2	Central area of trodden chalk
Hut F Enclosure 4	Single post ring	round	No	?	6.1x6.1 116.8	?	? hut could be different feature including fence line
Hut G Enclosure 8	Single post ring	round	No BandH ? R.Q.T.	S.E. S.E.	6.1x6.1 116.8	?	Postholes cut into terracing Small internal cut circular depression
Hut H Enclosure 5	Single post ring	Oval BandH	No	S.E. S.E.	6.7x5.5 116.8 or 95+P.	?	
Hut J Enclosure 5	Single post ring	Irregular	No ?	S.E. S.E.	4.8x4.8 72.3	?	
Hut K Enclosure 6	Single post ring	Almost round	?	?	6.1x6.1 116.8	?	2 poss. roundhouses to N. Fence/ palisade to S.
Hut L	Single post ring	Round	?	?	6.1x6.1 116.8	?	? smaller building to S.
Hut M Hut Platform 9	Single post ring Central posthole	Round	Yes	S.E.	4.6x4.6 66.4	?	Burnt area

Hut N	Single post ring Central posthole	Oval	Yes	S.S.E.	3.7x4.6 54.1	?	

Itford Hill Finds

Roof Supports									
Hut A Artefacts	3	4	5	6	7	8			
Hut B Artefacts	1	2	3	4	5	6	7	12	
Hut C Artefacts	1	2 B.P.L.	3 B.P.L.	4	5				
Hut D Artefacts	1	2	3	4	5	6	11		
Hut E Phase 1 Artefacts	4	6	9	11	13	15	18		
Hut E Phase 2 Artefacts	1?	2	3	5	10	14	16	19	20	
Hut F Artefacts	1	2	3	5	9	12	14	15	18	20
Hut G Artefacts	4	5	6	7	8	9				
Hut H Artefacts	1	2	3	4	5	6	7	8	9	
Hut J Artefacts	1	2	3							
Hut K Artefacts	1	2	3	4	5	6	7			
Hut L Artefacts	1	2	3	4	5	6	7			
Hut M Artefacts	2	3	4	5	6	7	8	9		
Hut N Artefacts	2	3	4	5	6	11				
Entrance porches Doorways										
Hut A Artefacts	1	1a	2	2a						
Hut B Artefacts	9	10	11	12						
Hut D Artefacts	7 CP. S.	8	9	10						
Hut E Artefacts	1	21	22	23						
Hut G Artefacts	1	2								
Hut H Artefacts	10	11								
Hut M Artefacts	1	10	11	12						
Hut N Artefacts	1	7	8	9	10					

Internal Features Containing Artefacts							
Hut A Artefacts	18 BF.						
Hut E Artefacts	26 G.	27 P.S.					
Hut L Artefacts	8 P.	9 P.					
External Features Containing Artefacts							
Hut C Artefacts found after bank had been demolished thus earlier than hut	21 HB. B.S.F. Beaker P.						
Enclosure 2	P. 0.09kg	Many Thousand BF.					
Hut A	P. 1.79kg						
Hut B	P. 0.85kg						
Hut C	P. 0.68kg						
Hut D	P. 2.24 kg	F.	BF. Many	Pebbles	Bone Tool	Whetstone	S.
Hut E	P. 3.43kg	L.	S.		B.		
Hut F	P. 0.43kg	Winkle Shells 1.36 kg					
Hut HandJ	P. 2.78kg	L. (Hut H)					
Hut K	P. 1.47kg	BF.	S.	L.			
Hut L	P. 9.55kg	BF.	B.	F.	S.	L.	
Hut G	P. 0.06kg	L.					
Hut M	P. 0.06kg	BF.	F.				
Hut N	P. 0.19kg	BF.	Kim. Shale	Ox Almost whole			

18) Kingly Vale SU 826 107

Excavators (Dates)
Curwen, E.C. 1932

References
Curwen, E.C. 1934. A Prehistoric Site In Kingly Vale, Near Chichester. *S.A.C.* **75**, 209-216

Topography - Small spur bottom of steep south-facing scarp slope. Sea clearly visible

Environmental evidence - Charcoal: Hawthorn, *Prunus sp.* (Cherry or Plum), and *Pyrus sp.* (White Beam?)

Field systems - Extensive field system runs across scarp slope spur and into valley. Some covered by yew. Much more extensive than reported in Curwen. Site used extensively for munitions during WW2.

Soil - Unknown

Neolithic remains- None

Barrows - Two placed on top of the scarp slope

Dykes - Five surround the site to the East, North and West. The site is enclosed by them

Routes - Easy access onto coastal plain. Possibly a route from top of Downs (Monarchs way). This may explain numerous cross ridge dykes

Hoards/finds - None

Phasing - None

Resources - Possibility of irrigation down from scarp slope into ponds at the bottom, this is done today, a pond holds water all year round

Raw materials - Unknown

Site Details

Type - Unknown

No. of huts/platforms - Ten possibly more

No. of enclosures - Two possibly more

Size - Unknown

Radiocarbon dates - None

Kingly Vale Finds

Site A	
Pit 1	
Topsoil	F.S.
Bottom of pit	P.?Incense cup B. Awl
Pit 4	
Topsoil	P. BF. F.S.C.
18 inches below surface	B.P.

19) Kingston Buci TQ 23634 05620

Excavators (Dates)
Flint-diggers (Workmen) (1st part of 20th century)
Occasional visits by Curwens to inspect pits containing artefacts or artefacts collected by workmen

References
Curwen, E. 1931. Prehistoric Remains from Kingston Buci, *S.A.C.* **72**, 185-217

Topography - Coastal Plain

Environmental evidence - None

Field systems - None

Soil - Unknown

Neolithic remains - None

Barrows - None

Dykes - None

Routes - None

Hoards/finds - None

Phasing - B.A./ Early Iron Age in northern part of site, M.B.A.-R.B. in South Eastern Part of Site

Resources - None

Raw materials - Unknown

Site Details

No. of huts/platforms - Unknown

No. of enclosures - Nil

Size - Unknown

Radiocarbon dates - None

Kingston Buci Finds

Pit 1911	P. BF.
Pit 1915	P.BF. B.
Northern Part of Site	L.W. S.W. Diorite polished axe Slate axe. S.F. B. S.
South-Eastern Part of Site	B. Br. Coin.

20) Knapp Farm SU 826 064

Excavators (Dates)
Gardiner, M. (1984-85)

References
Gardiner, M. and Hamilton, S. 1997. Knapp Farm, Bosham A Significant Find Of Bronze Age Pottery. *S.A.C.* **135**, 71-91

Topography - Coastal Plain

Environmental evidence - None

Field systems - None

Soil - Brickearth

Neolithic remains - None

Barrows - None

Dykes - Possible extension of Chichester Dyke system which is close by

Routes - None

Hoards/finds - None

Phasing - None

Resources - None

Raw materials - Unknown

Site Details

Type - Unknown

No. of huts/platforms - Unknown

No. of enclosures - Nil

Size - Unknown

Radiocarbon dates - None

Knapp Farm Finds

Area A pits		
Pit 109 Artefacts	110 P.	
Pit 118 Artefacts	119 P.	120 P.
Pit 121 Artefacts	122 P.	
Pit 123 Artefacts	124 P.	128 P.
Pit 126 Artefacts	127 P.	
Pit 305 Artefacts	306 P.	
Pit 314 Artefacts	315 P.	
Pit 319 Artefacts	320 P.	
Pit 325 Artefacts	326 P.	
Pit 327 Artefacts	328 P.	
Pit 329 Artefacts	330 P.	

21) Lavant SU 866 095

Excavators (Dates)
Kenny, J. (1993)

References
Kenny, J. 1994, Lavant: the reservoir site at Chalkpit Lane, *The Archaeology of The Chichester District 1993*, Chichester, 26-28

Topography - South-South-East facing southerly spur of South Downs.

Environmental evidence - None

Field systems - None

Soil - Unknown

Neolithic remains - On site.

Barrows - None

Dykes - None

Routes - None

Hoards/finds - None

Phasing - None

Resources - None

Raw materials - Unknown

Site Details

Type - Settlement

No. of huts/platforms - Ten possibly Thirteen, plus Three four-posters

No. of enclosures - Nil

Size - Unknown

Radiocarbon dates - None

Lavant Hut Design

Hut/Hut Platform	**Plan**	**Shape**	**Porch?**	**Facing**	**Int. Size m m^2**	**Ext. Size**	**Notes**
1	Single post ring	Round	Yes	East	7.5 44.25		
2	Single post ring	Round	?		7.5 44.25		
3	Single post ring	Round	?	East-north-east	7.5 44.25		
4	Single post ring	Round	Yes	East-south-east	7.5 44.25		
5	Single post ring? central post	Round	Yes	North-west	6.5 33.25		
6	Single post ring	Round	No	West-north-west	7.5 44.25		
7 8 Or 7/8	Single post ring Rebuild of 7 Double post ring	Round	Yes	East	7.5 44.25		
9	Single post ring	Round	No	?	7.5 44.25		
10	Single post ring	Round	Yes	North-east	4 12.6		

22) Mile Oak TQ 244 251

Excavator (Dates)
Russell, M. (1989-90)

References
Russell, M. 2002., Excavations at Mile Oak farm. In Rudling, D.R., (ed.) *Downland Settlement and Land-use: The Archaeology of The Brighton By-pass.* University College London Field Archaeology Unit, Monograph **1**

Topography - South-west facing slope of downland spur

Environmental evidence - None

Field systems - Surround site

Soil - Clay with flints

Neolithic remains - None

Barrows - None

Dykes - None

Routes - None

Hoards/finds - None

Phasing - None

Resources - None

Raw materials - Unknown

Site Design

No. of huts/platforms - Three

No. of enclosures - One

Size - 30m x 40m

Radiocarbon dates - Oxa-5105 110+/-50, Oxa-5106 3250+/-60, Oxa-5107 3260+/-65, Oxa-5108 2975+/-50, Oxa-5109 2975+/-50, Oxa-5110 2820+/-50, Oxa-3153 3480+/- 80, Oxa-3154 3050+/- 80, Oxa-3155 2950+/- 10 Oxa-3361 310+/- 60, Oxa-3386 190+/- 75, Oxa-3362 270+/- 60, GU-5269 2240+/- 70, GU-5675 2810+/-70 and GU 5691 2960+/-100

Mile Oak Hut Design

Hut/Hut Platform	Plan	Shape	Porch?	Facing	Int. Size	Ext. Size	Notes
Area A Roundhouse 1	Single post ring + Stake holes	Round	Yes	S.S.E.	6.1m 26.4m²		
Area C Roundhouse 2	Single post ring	Round	Yes	S.E.	6.9m 37.4m²		Based on Guilbet 1981
Area D Roundhouse 3	Single post ring	Oval/irregular	?	?	?		Ancillary Building?

Mile Oak Finds

Roof Supports										
Area A Roundhouse1	1431 Nil	395 Nil	1595 Nil	1579 B.	1656 Nil	635 Nil				
Area C Roundhouse 2	1474 Nil	1468 P.	1470 Nil	1501 Nil	1485 Nil	1544 Nil				
Area D Roundhouse 3	2619 Nil	2620 Nil	2623 Nil	1439 Nil	2613 Nil	2674 Nil	2616 Nil	2645 Nil	2758 Nil	2615 Nil
Entrance Porches										
Area A Roundhouse 1	1644 P.	1562 P.	1641 Nil	2687 Nil						
Area C Roundhouse 2	1499 P.	1536 Nil								
Area D Roundhouse 3										
Internal Features containing artefacts										
Area A Roundhouse 1	347 P.	1428 P.	1577 P.	392 P.	633 P.	635 P.				
Area C Roundhouse 2	1416 P.	1464 P.	1478 P.	1528 P.	1485 P.					
Large External Features containing artefacts										
Area A Roundhouse 1	603 P.									
Area C Roundhouse 2	1522 Nil	1458 Nil								
Area D Roundhouse 3	2705 H.B.									

23) Muntham Court TQ 12 08

<u>**Excavators**</u> (Dates)
Holleyman, G.A. and Burstow, G.P. (1954-?)

<u>**References**</u>
Holleyman, G.A. and Burstow, G.P. 1955, Excavations at Muntham Court, Findon , Sussex, *The Archaeological Newsletter* **5** (10), 204-05

Topography - None

Environmental evidence - None

Field systems - Around site

Soil - Unknown

Neolithic remains - None

Barrows - None

Dykes - None

Routes - None

Hoards/finds - None

Phasing - None

Resources - None

Raw materials - Unknown

<u>**Site Details**</u>

Type - Settlement, rectangular design

No. of huts/platforms - At least one

No. of enclosures - Nil

Size - Unknown

Radiocarbon dates - None

24) New Barn Down TQ 097 063

Excavators (Dates)
Curwen, E.C. (1933)

References
Curwen, E.C. 1934. A Late Bronze Age Farm and a Neolithic Pit-Dwelling On New Barn Down, Clapham, Nr Worthing, *S.A.C.* **75**, 135- 170

Topography - Enclosure lies near the top of the south-eastern spur of Harrow Hill on the South Downs

Environmental evidence - None

Field systems - South, east and west of site

Soil - Unknown

Neolithic remains - Pits further south on same spur

Barrows - Surround site

Dykes - None

Routes - None

Hoards/finds - None

Phasing - None

Resources - None

Raw materials - Unknown

Site Details

Type - Settlement, rectangular design

No of huts/platforms - Two possibly five

No of enclosures - One surrounding huts

Size - App 2000m²

Radiocarbon dates - None

New Barn Down Hut Design

Hut/Hut Platform	**Plan**	**Shape**	**Porch?**	**Facing**	**Int. Size m m²**	**Ext. Size m m²**	**Notes**
Cutting 111	Single post ring	Oval	No	S.E.?	9.7x6.5 51.6		
Cutting V111	Single post ring	Oval	No	S.E.	6.1x4.5 22.1		

New Barn Down Finds

Roof Supports	
Cutting 111 Artefacts	Southernmost posthole. Poss. entrance way. Whole quern stone.
Cutting VIII Artefacts	
Internal Features containing Artefacts	
Cutting 111 Hut Floor Artefacts	B.F. Neolithic chalk cup.
Cutting VIII Artefacts	Br.P.S.
Cutting V Artefacts	Several thousand BF. P.BT.B.
Pit 4 Artefacts	BF. F. P.S. BT.
Cutting 1 Artefacts	P.S. BF. B.
Cutting 11 Artefacts	P. Sh.S.BF. B.
Cutting V1 Artefacts	P.F. BF. B.
Cutting 1X Artefacts	P.BF.
Pit X Floor Artefacts	P. F.B. S. Sh. BC.
Pit X a Floor Artefacts	F.S.B.
Pit X11 Artefacts	S.P.
Pit XX111 Artefacts	S.F. BC.P.
Pit X1V Artefacts	F.

25) Park Brow TQ 165 111

<u>Excavators</u> (Dates)
Wolsely, G.R., Smith, R.A. and Hawley, W., (1924)

<u>References</u>
Wolsely, G.R. Smith, R.A. and Hawley, W. 1927. Prehistoric and Roman Settlements on Park Brow. *Archaeologia* **76**, 1-40.

Topography - Covers the top of a Southern spur of South Downs

Environmental evidence - None

Field systems - Surround site

Soil - Unknown

Neolithic remains - None

Barrows - One higher up along the spur. Surrounded by field system

Dykes - None

Routes - None

Hoards/finds - None

Phasing - None

Resources - None

Raw materials - Unknown

<u>Site Details</u>

Type - Unenclosed

No. of huts/platforms - At least one platform

No. of enclosures - Nil

Size - Unknown

Radiocarbon dates - None

Park Brow Hut Design

Hut/Hut Platform	Plan	Shape	Porch?	Facing	Int. Size m m^2	Ext. Size	Notes
Hut AC Excavator's interpretation	Single post ring Central post	Round	No	?	8.0 50.3		
Authors alternative Interpretation	Single post ring	Oval	Yes	S.E.	8x6 38.5		

Park Brow Finds

Roof Supports and Unspecified Pits	
Hut AC Artefacts	Unrecorded Most S.BC.B. One LW.
Specified Pits	
Hut AC Artefacts	Pit 4 P.
Floor	
Hut AC Artefacts	 F.LW.SW.B.Sh.

26) Patcham Fawcett A TQ 317 090

Excavator
Greatorex, C.G. (1993/4)

References
Greatorex, C.G. 2002. Excavations at Patcham Fawcett: A Summary. In Rudling, D.R. (ed.) *Downland Settlement and Land-use: The Archaeology of The Brighton By-pass*, University College London Field Archaeology Unit. Monograph **1**

Topography - South-west facing hill slope of South Downs

Environmental evidence - None

Field systems - Eastwick valley 500m north of site. Edge of extensive field system (Thoms, 1911)

Soil - Unknown

Neolithic remains - None

Barrows - E.B.A. adjacent to site (Holleyman and Yeats, 1960, 136-43)

Dykes - None

Routes - None

Hoards/finds - None

Phasing - None

Resources - None

Raw materials - Unknown

Site Details

Type - Unknown

No. of huts/platforms - Unknown

No. of enclosures - Nil

Size - Unknown

Radiocarbon dates - None

Patcham Fawcett Hut Design

Hut/Hut Platform	Plan	Shape	Porch?	Facing	Int. Size	Ext. Size	Notes
Building 1	Single post ring	Round	?	?	6.5m $33.2m^2$		
Building 11	Single post ring	Round	?	?	4m $12.6m^2$		
Building III	Single post ring	?	?	?	?		
Four poster A		Trapezoidal			1.7m $2.9m^2$		
Four poster B		Square			1.7m $2.9m^2$		
Four poster C		Square			1.7m $2.9m^2$		
Four poster D		Oblong			2mx3.5m $7m^2$		

26) Patcham Fawcett B TQ314 090

Excavator (Dates)
Greatorex, C.G. (1997)

References
Greatorex, C.G. (2002) Excavations at Patcham Fawcett: A Summary. In Rudling, D.R. (ed.) *Downland Settlement and Land-use: The Archaeology of The Brighton By-pass.* University College London Field Archaeology Unit, Monograph **1**

Topography - South-west facing hill slope of South Downs

Environmental evidence - None

Field systems - Eastwick valley 500m north of site. (Edge of extensive field system (Thoms, 1911))

Soil - Unknown

Neolithic remains - None

Barrows - E.B.A. adjacent to site (Holleyman and Yeats, 1960, 136-43)

Dykes - None

Routes - None

Hoards/finds - None

Phasing - None

Resources - None

Raw materials - Unknown

Site Details

Type - Unknown

No. of huts/platforms - Two

No. of enclosures - Nil

Size - Unknown

Radiocarbon dates - None

Patcham Fawcett B Hut Design

Hut/Hut Platform	**Plan**	**Shape**	**Porch?**	**Facing**	**Int. Size**	**Ext. Size**	**Notes**
Roundhouse 1	Single post ring + stake holes	Round	Yes	S.E.	8m 50.3m²		
Roundhouse 2	Single post ring	Round	?	?	5.9m 27.4m²		
Four Post Structure		Oblong			1m x2m 2m²		

Patcham Fawcett B Finds

Roof Supports											
Hut 1 Artefacts	126 P.F.B .	177 P. BF.	185 P.B . F.S.	187 P. BF.	193 F.	195 S.	197 Nil	20 1 B.	203 B.BF .	214 Nil	371 Nil
Hut 2 Artefacts	11 Nil	13 Nil	27 Nil	33 B.	41 F.S.	45 Nil	62 Nil	64 Nil	68 BF.		
Four Post Structure Artifacts	72 P.B.	74 P.F.S. BF.	76 F.	78 F.							
Entrance Porches											
Hut 1 Artefacts	143 Nil	145 P.F.	175 P.	347 Nil	375 Nil	377 Nil	379 Nil				
Internal Features Containing Artefacts											
Hut 1 **Artefacts**	84 P.B. BF.	141 F. BF.	86 si.	90 P. BF.	92 B. BF.	153 B.	137 P. BF.				
Hut 2 **Artefacts**	31 B.	66 P.	17 S	58 P.F. BC. BF.							
Large External Features Containing Artefacts	158 BF.S. B.	37 B.P. BF.F.	106 F.P. S.B . BF.	165 B.F.P. S BF.	124 B.F . P. BF.	181 P.B.F . BF.	322 P.B.F.S . BF.	29 0 B. BF .	199 P.B. BF.	51 P.B . FS. BF.	391 P.B . BF.
Artefacts	389 B. BF.	155 P.BF. S BF.	3 S. BF.	393 BF.							

27) Plumpton Plain TQ 36 12

Excavators (Dates)
Hollyman, G.A. and Curwen, E.C. (1934)

References
Holleyman, G.A. and Curwen, E.C. 1935. Late Bronze Age Lynchet-Settlements on Plumpton Plain. *P.P.S.* **1**, 16- 38.
Hawkes, C.F.C. 1935. The Pottery from the Sites on Plumpton Plain. *P.P.S.* **1**, 39- 59

Topography - Site A lies on top of a southerly orientated gently sloping spur of the South Downs, Site B lies 400 m south east downslope from Site A

Environmental evidence - None

Field systems - Between Site A and Site B and to the south of Site B lies an extensive system of lyncheted fields. The longer axis of fields runs mostly parallel with slope

Soil - Unknown

Neolithic remains - None

Barrows - Several around site

Dykes - Runs through area of sites

Routes - South Downs Way

Hoards/finds - None

Phasing - None

Resources - River - 79 Mins. Spring - 22 Mins. Sea - 132 Mins

Raw materials - Unknown

Site Details

No of huts/platforms - Site A - Nil, Site B - Three

No of enclosures - Site A - Four, Site B - Nil

Size - Site A Covers area app. 200m x 100m. Targeted excavation. 10 trenches**.** Site B Sampled area 80m x 50 m. 9 trial trenches

Radiocarbon dates - None

Plumpton Plain Hut Design

Hut/Hut Platform	Plan	Shape	Porch?	Facing	Int. Size m m²	Ext. Size m m²	Notes
A Enc. II Cutting 1	Single post ring Central posthole.	Round	No	?	6.0 28.3		? upright or sloping posts 75mm overburden
A Enc. III Cutting 2	Single post ring	Round	No	?	6.7 35.2		Upright posts 88mm overburden
A Enc. IV Cutting 1	Single post ring Central post	Round	No	?	4.5 15.9		Insubstantial depth of post holes. Shed for storage HandC
B Cutting 1	Single post ring Central posts?	Oval	No	W. or SE.	5 23.7		
B Cutting II	Single post	?	No	?	?	?	? Hut
B Cutting VIII	?	?	?	?	?	?	? Hut

Plumpton Plain Finds

Roof Supports								
A Enc. I1 Cut 1 Artefacts	1	2	3	4	5	6	7	
A Enc. 111 Cut 11 Artifacts	1	3	5 F.	12	7 Br.	8	9	4
A Enc. IV Cut 1 Artifacts	1	2	3	4	5	6		
B Cut 1 Artifacts	11 P.	12 P.	13 P.	14 P.	15 P.	16 P.	2 P.	
B Cut 11 Artifacts	1	2	3	4	5	6	7	
Internal Features								
B Cut 1 Artifacts	1 P.	8 P.	9 P.	10 P.	4 P.	5 P.	6 P.	7 P.
External Features								
A Enc. 111 Cut 1 Artifacts	1 F. BF.	2 P.	3 P.					
A Enc. III Cut II Artifacts	10 P.B. BF.							
B Cut VIII Artifacts	1 P.S. L.B.	2 P.S. L.B.	3 P.S. L.B.	4 P.S. L.B.				
Hut Floors								
A Enc. 11 Cut 1	P.S. F.BF.							
A Enc. III Cut 11	P.S. F. BF.							
A Enc. IV Cut I	BF.							

B cut I	P. F. BF. B. L. SW. S.							
B Cut II	P.F. BF. B. L. SW. S.							
B Cut VIII	Br. B. L. SW. S. BF. F.							
Areas outside Huts								
A Enc. II Cut II	P.F. BF.							
A Enc. III Cut I	BF. P. F.							
A Enc. III Cut II	BF. P.							
A Enc. III Cut III Section C-D	BF. F. In soil before enc. made.							
A Enc. III Cut III Section A-B	Leaf-shaped Arrowhead P.F.							
A Enc. IV Cut IV Section A-B	P.F. in Ditch P.F.							
A Enc. IV Cut IV Section E-F	F. BF. Small iron lance-head							
A Enc. IV Cut IV Section G-H	P. BF.F. 1 Arrowhead ? 1 Flint axe							
B Cut 1	P. BF.							
B Cut III- VII and IX	P.BF.F.LW. S.							

28) Potlands Farm TQ 086 087

<u>Excavators</u> (Dates)
Stevens, S. (1994)

<u>References</u>
Stevens, S. 1997. Excavations at Potlands Farm, Patching, West Sussex, *S.A.C.***135**, 59-70

Topography – Not known

Environmental evidence - None

Field systems - Open mixed oak dominated woodland. (palynological analysis)

Soil - Unknown

Neolithic remains - None

Barrows - None

Dykes - None

Routes - None

Hoards/finds - None

Phasing - None

Resources - None

Raw materials - Unknown

<u>Site Details</u>

Type - Burnt Mound

No. of huts/platforms - Unknown

No. of enclosures - Nil

Size - Unknown

Radiocarbon dates - Feature 131 900-800 cal. BC (laboratory ref: Q3259)

Potlands Farm Finds

Burnt Mound Artefacts	100 P.F.					
Hearth Artefacts	21 P.F.					
Postholes and Gully Artefacts	93 P.F.	75				
Pits Artefacts	95 F.	77 P.				
Waterlogged feature 108 Artefacts	102 F.	103 P.F.	104 P.F.	105 P.F.	106	107

29) Rustington B TQ 058 031

<u>Excavators</u> (Dates)
Rudling, D.R. (1986-88)

<u>References</u>
Rudling, D.R. 1990. Archaeological Finds At Rustington, West Sussex, 1986-88, *S.A.C.*, **128**, 1-19

Topography - Coastal Plain

Environmental evidence - None

Field systems - None

Soil - Brickearth

Neolithic remains - None

Barrows - None

Dykes - None

Routes - None

Hoards/finds - None

Phasing - None

Resources - None

Raw materials - Unknown

<u>Site Details</u>

Type - Settlement

No. of huts/platforms - One to Three

No. of enclosures - Nil

Size - Unknown

Radiocarbon dates - None

Rustington B. Finds

Area B Poss. Remains of Hut Artefacts	 P.
Area C Pit Artefacts	 P.B.Sh.F.
Area D Pit/Depression Artefacts	 P.F.S.
Area E Prob. Remains of Hut Artefacts	L.B.A. Socketed axe found in spoil
Area G Pit/Depression Artefacts	 BF.F.
Area I Pit/Depression Artefacts	 F.Br. P(RB).
Area L Pit? Artefacts	 P.

30) Seaford Head TV 004 978

__Excavators__ (Dates)
Bedwin, O. (1983)

__References__

Bedwin, O. 1986. Excavations at Seaford Head Camp, East Sussex, 1983. *S.A.C.* **124**, 25-33
MacPhail, R. 1983. Preliminary Soil Report on Seaford Head, Sussex, *Ancient Monuments Laboratory Report.*
MacPhail, R. 1984. Second Soil Report on Seaford Head, Sussex Laboratory Analysis, *Ancient Monuments Laboratory Report.*

Topography - South Downs Hill, with steep approaches to west but more gradual ones from the north and east. The southern side of the site is an eroded chalk cliff. The position holds extensive and uninterrupted views of the South Downs

Environmental evidence - None

Pollen analysis - (Scaife, R.G., Archived) indicates open countryside

Micromorphological analysis - (MacPhail, R., 1983 and 4) indicated recent tillage of an agriculturally difficult soil

Field systems - None (Medieval ? strip lynchets to west of site)

Soil - Clay with Flints - Eroding cliff face shows what appears to be thick layer of loess.

Neolithic remains - None

Barrows - None

Dykes - None

Routes - None

Hoards/finds - None

Phasing - None

Resources - None

Raw materials – Unknown

__Site Details__

Type - Enclosure

No. of huts/platforms - Nil

No. of enclosures - One

Size - Now 4.2 ha. (Originally considerably larger)

Radiocarbon dates - None

Seaford Head Finds

Ditch		
Trench A Artefacts	24 P.	
Trench B Artefacts	15 P.	Unspecified F.Sh.B.

31) Selsey Bill Golf Links Lane SU 855 922

Excavators (Dates)
White, G.M. (1931)

References
White, G.M. 1934. Prehistoric remains from Selsey Bill, *Antiq J* **14**, 40-52

Topography - North-South gravel ridge on Peninsula

Environmental evidence - None

Field systems - None

Soil - Gravel

Neolithic remains - Neolithic pottery found on site

Barrows - None

Dykes - None

Routes - None

Hoards/finds - None

Phasing - None

Resources - None

Raw materials - Unknown

Site Details

Type - Unknown

No. of huts/platforms - Nil

No. of enclosures - Nil

Size - Unknown

Radiocarbon dates - None

32) Selsey East Beach SU 857 922

<u>Excavators</u> (Dates)
Kenny, J., (1988)

<u>References</u>
Kenny, J. 1989. Selsey Bill, *The Archaeology of the Chichester District 1988, C*hichester, 33-35
Seager Thomas, M. 2001. Two early first millennium BC wells at Selsey, West Sussex and their wider significance, *Antiq J* **81**, 15-50

Topography - Close to beach. Estimated to have been 200m from beach in first century BC

Environmental evidence - Hone

Field systems - See below

Soil - Brickearth

Neolithic remains - None

Barrows - None

Dykes - None

Routes - None

Hoards/finds - None

Phasing - None

Resources - None

Raw materials - Unknown

<u>Site Details</u>

Type - Ditch (Possibly part of an enclosure/ field system) or even well

No. of huts/platforms - Nil

No. of enclosures - Nil

Size - Unknown

Radiocarbon dates – None

Selsey East Beach Finds

Ditch 112 Artefacts	114 P.F.S.	115 P.F. B.Ks.	116 P.F. C.B.	117 P.B.	118 P.B. F.	119 P.	121 P.F. BF.	120-134 P.F.BF. BC.B.Ks.
Ditch 77 Artefacts	78 P.S.F.	79? P.						
Ditch 91 Artefacts	? C.BF.							
Cut 10 Artefacts	? P.							
Cut 63 Artefacts	? S.P.							

33) Selsey West Beach Site A SU 853 924

Excavators (Dates)
Seager Thomas, M. (1996-7)

References
Seager Thomas, M. 1998. New evidence for a late Bronze Age occupation of Selsey Bill, *S.A.C.* **136**, 7-22

Topography - Situated on gravel ridge that runs north south down promontory stratified material in sea cliff

Environmental evidence - None

Field systems - None

Soil - Unknown

Neolithic remains - None

Barrows - None

Dykes - None

Routes - None

Hoards/finds - None

Phasing - None

Resources - None

Raw materials – Unknown

Site Details

No. of huts/platforms - Nil

No. of enclosures - Nil

Size - Unknown

Radiocarbon dates - None

Selsey West Beach Site A Finds

Postholes			
15 Artefacts	14/12 P.		
19 Artefacts	18 P.		
Pits			
7 Artefacts	6 P.F.S	6/8 P.	8 P.
17 Artefacts	16 P.		
31 Artefacts	30 P.		
34 Artefacts	32 P.	33 S.	

34) Selsey West Beach Site B SU 853 924

Excavators (Dates)
Seager Thomas, M. (1997)

References
Seager Thomas, M. 1998. New evidence for a late Bronze Age occupation of Selsey Bill, *S.A.C.* **136**, 7-22
Seager Thomas, M. 2001. Two early first millennium BC wells at Selsey, West Sussex and their wider significance, *Antiq J* **81**, 15-50

Topography - Situated on gravel ridge. Views of The Isle of Wight and Portsmouth. Stratified material in sea cliff

Environmental evidence - None

Field systems - None

Soil - Unknown

Neolithic remains - None

Barrows - None

Dykes - None

Routes - None

Hoards/finds - None

Phasing - None

Resources - None

Raw materials - Unknown

Site Details

Type - Pit identified as a well.

No. of huts/platforms - Nil

No. of enclosures - Nil

Size - Unknown

Radiocarbon dates - None

Selsey West Beach Site B Finds

Pit/Well 55 Artefacts	36 P.S.	36/40 P.	40 P.F.S.	41 P.F.S.	44/42 P.F.S.	44/45 P.F.	47 P.	49 P.F.S.	50 P.S.	53 P.S.	45 F.S.
Pit/Well 55 Artefacts	60 P.	45 F.S.	55(slump) P.S.								

35) Shinewater TQ 614 032

<u>Excavators</u> (Dates)
Greatorex, C. (1995)

<u>References</u>
Greatorex, C. 2003. Living on the margins? The Late Bronze Age landscape of the Willingdon Levels. In Rudling, D.R. (ed) *Archaeology of Sussex to AD 2000*, Norfolk, Heritage

Topography - Sea-level marshland

Environmental evidence - None

Field systems - None

Soil - Unknown

Neolithic remains - None

Barrows - None

Dykes - None

Routes - None

Hoards/finds - None

Phasing - None

Resources - None

Raw materials - Unknown

<u>Site Details</u>

Type - Unknown

No. of huts/platforms - Nil

No. of enclosures - Nil

Size - Unknown

Radiocarbon dates - None

36) Slonk Hill TQ 226 065

Excavators
Hartridger,R. 1969-74

References
Hartridge, R. 1978. Excavations At The Prehistoric and Romano-British Site On Slonk Hill, Shoreham, Sussex. *S.A.C.* **116**, 69-141

Topography - Situated on the crown of a hill on the coastal plain

Environmental evidence - None

Field systems - On northern side of site

Soil - Brickearth

Neolithic remains - None

Barrows - Several

Dykes - None

Routes - Possible trackways link to Thundersbarrow and Kingston Buci.

Hoards/finds - None

Phasing - None

Resources - None

Raw materials - Unknown

Site Details

Type - Unknown

No. of huts/platforms - Nil

No. of enclosures - Two

Size - Unknown

Radiocarbon dates - None

37) Testers TQ 176 111

Excavators (Dates)
Gardiner, M. (1985)

References
Gardiner , M. 1988. Excavations at Testers, White Horse Square, Steyning, 1985, *S.A.C.* **126**, 53-76

Topography - Bottom of Northern scarp of South Downs

Environmental evidence - None

Field systems - None

Soil - Unknown

Neolithic remains - None

Barrows - None

Dykes - None

Routes - None

Hoards/finds - None

Phasing - None

Resources - None

Raw materials - Unknown

Site Details

Type - Ditches

No. of huts/platforms - Nil

No. of enclosures - Nil

Size - Unknown

Radiocarbon dates - None

Testers Finds

Ditch 33	
Artefacts	P.F.BF.

38) Thundersbarrow TQ 229 083

Excavators (Dates)
Curwen. E.C. (1932)

References

Curwen, E.C. 1933. Excavations at Thundersbarrow Hill, Sussex, *Antiquaries Journal* **13**, 109-133
Oakley, K.P. 1933. The pottery from the Romano- British Site on Thundersbarrow Hill, *Antiquaries Journal* **13**, 134-151

Topography - Top of southerly facing spur of South Downs. Views all around the site to sea, Chanctonbury, Devils Dyke and Cissbury

Environmental evidence - None

Field systems - Extensive surround site

Soil - Loam, area of clay-with-flints

Neolithic remains - None

Barrows - One Long Barrow on site robbed out

Dykes - None

Routes - Rigeway to Mile Oak and Kingston Buci

Hoards/finds - None

Phasing - None

Resources - None

Raw materials - Unknown

Site Details

Type - Enclosure

No. of huts/platforms - Nil

No. of enclosures - Two

Size - Unknown

Radiocarbon dates - None

39)Varley Halls TQ 331 089

Excavator (Dates)
Greig, I. (1997)

References
Greig, I. 1997. Excavation of a Bronze Age settlement at Varley Halls, Coldean Lane, Brighton, East Sussex, *S.A.C.***135**, 7-58

Topography - Steep south-south-western slope of Downland spur

Environmental evidence -None

Field systems - Lynchets on site. Overlain by possible L.B.A. hut platform. Holleyman, 1937

Soil - Unknown

Neolithic remains - None

Barrows - None

Dykes - None

Routes - None

Hoards/finds - None

Phasing - None

Resources - None

Raw materials - Unknown

Site Details

Type - Settlement

No. of huts/platforms - 4 M.B.A. and 1 L.B.A.

No. of enclosures - Nil

Size - Unknown

Radiocarbon dates - Cal BC 1505-1380 or 1340-1320 BM-2936. Debris from huts 3/4

Varley Halls Hut Design

Hut/Hut Platform	**Plan**	**Shape**	**Porch?**	**Facing**	**Int. Size**	**Ext. Size**	**Notes**
Hut 1 Phase 1	Single post ring central post	Oval	No	S.E.	6m 28.3m²		
Hut 1 Phase 2	Single post ring central post	Oval	Yes	S.S.E.	5.3m 22m²		
Hut 2 Phase 1	Single post ring ? central post	Oval	No	S.	6m 23.8m²		
Hut 2 Phase 2	Single post ring ? central post	Oval	No	S.E.	6m 28.3m²		
Hut 3 ?/terrace	Possible four posted building adjacent to terrace	Oblong	?	?			
Hut 4	Single post ring? Plus wall?	Oblong	?	?	6.1m 30.2m²		Truncated on Southern side
Hut 5	? hut only very partially excavated	?	?	?			Dated to L.B.A. by pottery assemblage

Varley Halls Finds

Roof Supports									
Hut 1 Phase 1 Artefacts	216 B.	212 Nil	137 BF	262 Nil	254 P.	127 Nil			
Hut 1 Phase 2 Artefacts	188 B.	299 Nil	141 Nil	139 F.	133 Nil	135 Nil	131 Nil		
Hut 2 Phase 1 Artefacts	361 Nil	306 Nil	359 Nil	302 Nil	388 Nil	286 Nil	365 Nil	433 Nil	335 Nil
Hut 3 Trapezoidal hut Artefacts	266 Nil	267 Nil	255 Nil	283 Nil					
Hut 4 Artefacts	351 P.	341 Nil	343 S.	323 Nil					

Entrance Porches									
Hut 1 Phase 1 Artefacts	151 Nil	205 B.							
Hut 1 Phase 1 Artefacts	226 Nil	205 B.							
Hut 2 Phase 2 Artefacts	296 Nil	300 Nil							
Huts 3and4 No porch identified									
Internal Features Containing Artefacts									
Hut 1 Artefacts	111 F.								
Hut 2 Artefacts	272 F.B.								
Large External Features Containing Artefacts									
Contexts Artefacts	319 P.B.F.	106 F.B.	339 H.B.	435 P.F.S.	348 BF.				
Postholes Forming Fencelines	163 F.	165 Nil	167 Nil	169 G.	408 Nil				
Misc. Ext. Features With Artefacts									
Contexts Artefacts	143 F.	195 P.							

40) West Blatchington TQ 07 26

<u>Excavators</u> (Dates)
Norris, N.E.S. and Burstow, F.S.A. (1947-8)

<u>References</u>
Norris, N.E.S. and Burstow, F.S.A. 1950. A Prehistoric and Romano- British Site at West Blatchington, Hove, *S.A.C.* **89**, 1-56.

Topography - Gentle S.S.E slope of Downland spur

Environmental evidence - None

Field systems - Large, 500m upslope to N.N.E.

Neolithic remains - None

Barrows - None

Dykes - Devils Dyke

Routes - South Downs Way and double lynchet track-way runs past site to South Downs Way

Hoards/finds - None

Phasing - None

Resources - River - 65 Mins. Spring ? Sea - 40 Mins.

Raw materials - Unknown

<u>Site Details</u>

Type - Unknown

No. of huts/platforms - Nil

No. of enclosures - Nil

Size - Unknown

Radiocarbon dates - None

41)Yapton SU 964 244

Excavators (Dates)
Rudling, D. (1984)

References

Aldsworth, F.G. 1983. A Bronze Age Hoard and Settlement at Yapton, *S.A.C.* **121**, 198
Hearne, F. 1940. A Bronze Hoard from Flansham near Middleton, *S.A.C.* **81**, 205-9
Rudling, D. 1987.The Excavation Of A Late Bronze Age Site At Yapton, West Sussex, *S.A.C.* **125**, 51-67

Topography - Situated on Coastal Plain. Nowadays susceptible to water logging

Environmental evidence - None

Field systems - None

Soil - Brickearth

Neolithic remains - None

Barrows - None

Dykes - None

Routes - None

Hoards/finds - M.B.A. Hoard found in next field (Aldsworth, 1983), L.B.A. Hoard (Hearne, 1940)

Phasing - None

Resources - None

Raw materials - Unknown

Site Details

Type - Unknown

No. of huts/platforms - Nil

No. of enclosures - Nil

Size - Unknown

Radiocarbon dates - Pit 2 context 4 2600BP+/- 70 or 650BC (Har-7038)

Yapton Finds

Trench	Pit 6	Pit 2	Pit 15	Pit 16
Artefacts	P.	P.F.	P.	P.F.

Key

P. - Pottery
F. - Flint
BF. - Firecracked/ Burnt Flint
B. - Bone
S. - Stone
C. - Charcoal
BC. - Burnt Clay
Sh. - Shell
Br. - Bronze

Exterior size of hut given where it is known and not identical to interior size

ANALYSIS OF BULK SOIL AND SEDIMENT SAMPLES FROM THE LATE BRONZE AGE SETTLEMENT SITE AT BLACK PATCH, EAST SUSSEX

For: **R.Q. Tapper, Black Patch Project**

By: **Dr J. Crowther (October 2008)**
Archaeological Services, University of Wales, Lampeter, Ceredigion, UK SA48 7ED

Introduction

A programme of analysis was undertaken on 26 bulk soil/sediment samples from a wide range of features ranging from pit and post hole fills to lynchet and valley bottom deposits (detailed in Table 1) in the hope of gaining additional insight into their character, origin and mode of development. Each sample was analysed for: loss-on-ignition (LOI), which provides an estimate of the organic matter concentration; carbonate content (estimated); phosphate, enrichment of which is associated with inputs of organic materials, most notably excreta and especially bone (see reviews by Bethel and Máté 1989; Crowther 1997; Heron 2001); and magnetic susceptibility, which is indicative of burning (Clark 1996; Scollar *et al.* 1990). In addition, pH and particle-size analyses were undertaken on selected samples.

Methods

Analysis was undertaken on the fine earth fraction (i.e. < 2 mm) of the samples. LOI (loss-on-ignition) was determined by ignition at 375ºC for 16 hours (Ball 1964) – previous experimental studies having shown that there is normally no significant breakdown of carbonate at this temperature; pH (1:2.5, water) was measured using a combination electrode; carbonate content was estimated by observing the reaction when a few drops of 10% HCl are applied (Hodgson 1974); particle size was determined using the pipette method on < 2 mm mineral (peroxide-treated) soil (Avery and Bascomb 1974); and phosphate-P (total phosphate) was measured following oxidation with NaOBr using 1N H_2SO_4 as the extractant (Dick and Tabatabai 1977) – with a slight excess of H_2SO_4 being added initially to neutralise any remaining carbonate.

In addition to χ (low frequency mass-specific magnetic susceptibility), determinations were made of χ_{max} (maximum potential magnetic susceptibility) by subjecting a sample to optimum conditions for susceptibility enhancement in the laboratory. χ_{conv} (fractional conversion), which is expressed as a percentage, is a measure of the extent to which the potential susceptibility has been achieved in the original sample, viz: (χ/χ_{max}) x 100.0 (Tite 1972; Scollar *et al.* 1990). In many respects this is a better indicator of magnetic susceptibility enhancement than raw χ data, particularly in cases where soils have widely differing χ_{max} values (Crowther and Barker, 1995; Crowther 2003). χ_{conv} values of ≥ 5.00% are often taken as being indicative of some degree of susceptibility enhancement. A Bartington MS2 meter was used for magnetic susceptibility measurements. χ_{max} was achieved by heating samples at 650°C in reducing, followed by oxidising conditions. The method used broadly follows that of Tite and Mullins (1971), except that household flour was mixed with the soils and lids placed on the crucibles to create the reducing environment (after Graham and Scollar 1976; Crowther and Barker 1995).

Results and discussion

The analytical results are presented in Tables 1 and 2. Here, a broad overview is presented of the individual properties analysed. Key features relating to individual samples are highlighted in Table 1. In the follow text sample numbers are shown in square parentheses.

Organic matter (estimated by loss-on-ignition)

The samples exhibit quite wide variability in LOI (range, 1.89–13.3%). Half of the samples (highlighted in Table 1) have values of ≥ 7.50% which, on chalk, are likely to indicate a topsoil origin, a significant topsoil component and/or artificial organic enrichment (e.g. midden-type material), unless they have been affected by impeded drainage. The only likely exception to this is the fill of post hole 2105 [9], which appeared to contain many partially burnt fragments of wood (which will have contributed significantly to its LOI of 11.9%). The four remaining samples with a LOI ≥ 10.0% are from layers 228/1 (10.9%) and 228/2 (13.3%) from depression 229 [1 and 2] – these high levels could reflect impeded drainage/waterlogging in a pond feature (as is suggested as a possibility in the notes supplied), but this would need to be confirmed by other environmental evidence (e.g. does micromorphological evidence suggest impeded drainage/waterlogging?); the upper fill of pit 2125 [10]; and fill of post hole 2153 [15]. Other key points to note are that: layer 223 from the possible hut floor has a relatively high LOI (9.95%); the various samples from pit 2125 are generally more organic rich than those from pit 297 – though this contrast needs to be interpreted with caution, since it may be largely attributable to the generally higher carbonate content in pit 297 (i.e. the carbonate will effectively 'dilute' the LOI); the several valley bottom samples [20–25] are mostly more minerogenic (i.e. LOI < 7.50%), but quite variable in LOI, suggesting that they are derived from different source materials; and the lynchet material [26] has quite a high LOI (8.76%).

Carbonate

Carbonate in these downland soils and sediments almost certainly reflects the presence of significant amounts of chalk – either natural chalk essentially *in situ* (e.g. a natural subsoil or poorly leached topsoil horizon) or chalk incorporated through human disturbance. The various contexts vary markedly in carbonate content. Six samples (highlighted in Table 1) have an extremely high carbonate content, well in excess of 10%: three of the samples [4–6] from the fill of pit 297, the fills of two of post holes 2237 and 2183 [16 and 17], and layer 105 [18]. In each case consideration will need to be given as to the source of this chalky material. Interestingly, of the valley bottom deposits only the supposed modern colluvium from Pit 2 [20] is very calcareous, whereas the remaining (older) colluvial deposits have a much lower carbonate content. While this latter finding could be the result of post-depositional leaching of the colluvium, it seems more likely to reflect the fact that the source material (i.e. the soils on the downland slopes) either never contained much chalk or were subject to leaching/decalcification prior to being eroded and deposited in the valley bottom. It should be noted that the lynchet sample [26] is also very calcareous – suggesting that at the time this was formed either the topsoil as a whole was naturally quite chalky and/or chalky subsoil became incorporated through ploughing, etc.

Only layer 223 [8] from the possible hut floor contains no detectable trace of carbonate. This layer is almost certainly the result of leaching/decalcification, but on present evidence it is impossible to say whether this layer comprises material from an external source that was already heavily leached prior to deposition, or whether the decalcification occurred *in situ*. Thin section evidence might provide insight into this.

pH

As would be anticipated, the pH data closely mirror the carbonate content: the six samples [20–25] from the valley bottom deposits and the lynchet deposit [26] are all alkaline (pH range: 7.7–8.1), whereas layer 223 [8] from the possible hut floor has a neutral pH of 7.4.

Particle size

Particle-size analysis was undertaken on two samples [8 and 25]. Although both samples are dominated by silts and contain only a very small proportion of sands, the valley bottom sample from Pit 3 [25] has a somewhat higher clay content than layer 223 from the possible hut floor [8]. The difference in texture is, however, quite small, and caution needs to be exercised if the data are used to make inferences about the source material used for the possible hut floor.

Total phosphate (phosphate-P)

The phosphate concentrations recorded are not particularly high (range, 0.433–1.35 mg g^{-1}), especially in view of the fact that many of the samples would appear to comprise a significant topsoil-type component. Much higher concentrations have been recorded in pit fills elsewhere on chalk downland in southern England, e.g. Battlesbury Iron Age settlement: range, 9.45–11.6 mg g^{-1} (Macphail and Crowther 2001). This suggests that any enrichment in the Black Patch samples is very weak and likely to be derived from purely organic sources (e.g. manuring) rather than from bone or from midden-type deposits (which often include bone), though there is in fact no statistically significant underlying correlation between phosphate-P and LOI over the 26 samples. Somewhat arbitrarily, the 10 samples with phosphate-P concentrations of $\geq$ 0.800 mg g^{-1} have been highlighted in Table 1 as showing possible signs of weak enrichment. Of these, the ones that have a low LOI (say < 5.00%) are most likely to be enriched. These, which are identified in Table 1, comprise: contexts 250 and 252 [5 and 6] from the fill of pit 297 and the fill of post hole 2237 [16]. Interestingly, none of the contexts from pit 2125 shows signs of phosphate enrichment (cf. pit 279).

Magnetic susceptibility *(χ, χ_{max} and χ_{conv})*

The χ_{max} (maximum potential susceptibility) data reveal quite a clear relationship with carbonate content, with the six samples identified as being extremely rich in carbonate having generally lower values (range, 445–1370 x 10^{-8} SI) than the remaining 20 samples (range, 1020–2360 x 10^{-8} SI). This is presumably attributable to the overall Fe content of the soil being 'diluted' as a result of the high carbonate content. Two samples [23 and 25] from the valley bottom deposits stand out as having somewhat higher values (2160 and 2360 x 10^{-8} SI, respectively). This suggests that these are slightly more Fe-rich, which could reflect a difference in the nature or source of the parent material.

By comparison with the phosphate, the magnetic susceptibility data appear to show some stronger anthropogenic signatures, which are likely associated with burning, in many of the archaeological contexts. As noted above, χ_{conv} (fractional conversion) values of ≥ 5.00% are often taken as being indicative of susceptibility enhancement under UK conditions and these samples have been highlighted in Table 1. It is impossible from the present data to establish whether the heating/burning has taken place *in situ* or the enhancement is attributable to the incorporation of material within fills that has been burnt elsewhere. Thin section evidence may provide some insight into this. Five of the samples have been identified in Table 1 as either 'strongly enhanced' (10.0–19.9%) or 'very strongly enhanced' (20.0–39.9%). Four of these are from the various fills of pit 297 [4–7] and the other from the fill of post hole 2237 [16]. Four [11–14] of the five contexts sampled from the fill of pit 2125 also show signs of enhancement, but this not so nearly so marked as in pit 297. Not all of the archaeological contexts are enhanced, most notably layer 223 [8] from the possible hut floor. Also, none of the valley bottom deposits [20–25] show signs of enhancement. While this latter finding is not surprising, and presumably confirms (cf. phosphate data) that these deposits are either natural and/or have been little affected by human activity, it is important in that it gives some confidence in the veracity of the magnetic susceptibility data and the approach adopted in their interpretation.

Conclusions and recommendations

The present results are encouraging in that they have demonstrated there to be quite considerable variability in many of the properties analysed. The LOI, carbonate, pH and χ_{max} data provide useful insight into the origins and/or parent materials of the some of the soils and deposits, some of which have been likely affected by human activity; whereas the phosphate and magnetic susceptibility fractional conversion data have identified those archaeological contexts (cf. valley bottom deposits) that show likely signs of anthropogenic enrichment (phosphate) and enhancement (magnetic susceptibility). These findings should complement well the field observations made during the excavations and the results of the soil thin section analysis that is being undertaken. It should be noted that while particle-size analysis revealed a difference between the two samples analysed, the results need to be interpreted with caution when based on such a small set of samples.

On the basis of these results it is recommended that this programme of analysis is extended to other contexts that are regarded as being critical to the interpretation of the site.

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Table 1: Analytical data

No	Context	Feature	LOI[a] (%)	Carbonate[b] (est, %)	pH[c] (water)	Phosphate-P[d] (mg g^{-1})	χ (10^{-8} SI)	χ_{max}[e] (10^{-8} SI)	χ_{conv}[f] (%)
1	Layer 228/1	Depression 229	**10.9****	2		**0.884***	62.5	1630	3.83
2	Layer 228/2	Below 228/1	**13.3****	1		**1.11***	61.2	1720	3.56
3	Layer 239	Below 228/2	7.36	**10***		**0.988***	54.1	1310	4.13
4	246	Pit 297	6.65	**10****		**0.934***	134	1090	**12.3****
5	250	Pit 297	4.30	**10****		**1.24****	163	**864 o**	**18.9****
6	252	Pit 297	2.97	**10****		**1.35****	183	**709 o**	**25.8*****
7	278	Pit 297	**8.67***	**10***		**0.982***	166	1390	**11.9****
8	Layer 223	Hut floor?	**9.95***	**0.1o**	**7.4***	**0.873***	49.0	1800	2.72
9	Fill of 2105[g]	Post Hole	**11.9****	**10***		0.778	67.7	1140	**5.94***
10	2126	Pit 2125	**10.3****	2		0.712	79.7	1660	4.80
11	2140	Pit 2125	**9.31***	2		0.716	87.6	1670	**5.25***
12	2142	Pit 2125	**7.97***	5		0.706	92.0	1610	**5.71***
13	2144	Pit 2125	**8.17***	5		0.743	96.1	1590	**6.04***
14	2146	Pit 2125	7.21	**10***		0.754	98.1	1430	**6.86***
15	Fill of 2153	Post hole	**10.9****	5		0.643	61.0	1510	4.04
16	Fill of 2237	Post hole	3.92	**10****		**1.03****	158	**445 o**	**35.5*****
17	Fill of 2183	Post hole	5.66	**10****		0.509	38.8	1250	3.10
18	105	Layer	**8.13***	**10****		0.789	46.2	1370	3.37
19	Fill of 299	Post hole	6.00	0.5		**0.821***	50.5	1710	2.95
20	Pit 2	Valley bottom	**7.69***	**10***	8.0	0.556	28.9	1370	2.11
21	Pit 2	Valley bottom	4.98	0.5	7.7	0.782	31.6	1710	1.85
22	Pit1	Valley bottom	7.01	0.5	7.8	0.558	56.6	1700	3.33
23	Pit1	Valley bottom	3.60	1	8.1	0.636	52.1	**2160***	2.41
24	Pit 3	Valley bottom	1.89	0.5	8.1	0.433	17.5	1020	1.72
25	Pit 3	Valley bottom	2.84	0.5	8.0	0.527	31.5	**2360***	1.33
26	Lynchet	Lynchet	**8.76***	**10***	8.0	0.759	45.9	1470	3.12

a **Loss-on-ignition:** Figures highlighted in bold have notably higher LOI values: * = 7.50–9.99%, ** = 10.0–14.9% – see also footnote[g]

b **Carbonate:** Extreme figures are highlighted in bold: o = non-calcareous, * = ‘very calcareous’ (i.e. recorded as 10), 10** = ‘very calcareous’, extremely high carbonate content

c **pH:** Figure highlighted in bold indicates a notably lower pH

d **Phosphate-P:** Figures highlighted in bold show possible signs of weak phosphate-P enrichment (≥ 0.800 mg g-1): * = possible enrichment, ** = more likely enrichment (LOI < 5.00%) – see text

e **χ_{max}:** Low and high figures are highlighted in bold: o = low, * = high

f **χ_{conv}:** Figures highlighted in bold show signs of magnetic susceptibility enhancement: * = enhanced (5.00–9.99%), ** = strongly enhanced (10.0–19.9%), *** = very strongly enhanced (20.0–39.9%)

[g] **Fill of 2105:** This sample appeared to contain much partially burnt wood, which will have contributed to its relatively high LOI

Table 2: Particle size analysis of selected samples

No	Context	Feature	Coarse sand 600 µm -2.0 mm (%)	Medium sand 200-600 µm (%)	Fine sand 60-200 µm (%)	Silt 2-60 µm (%)	Clay <2 µm (%)	Texture class
8	Layer 223	Hut floor?	0.6	0.8	4.6	64.9	29.2	Silty clay loam
25	Pit 3	Valley bottom	0.9	0.9	3.9	55.4	38.8	Silty clay

REPORT ON THE MAGNETIC SUSCEPTIBILITY SURVEY AT BLACK PATCH, ALCISTON, EAST SUSSEX - AUGUST, 2005.

By: Adrian Challands - 6th September, 2005

Summary

Magnetic susceptibility survey at the Black Patch Bronze Age settlement detected occupation areas containing high values possibly representing hearths. Within the excavation, overall MS survey defined the spatial extent of settlement on three sides.

1.0 Introduction

1.1 On the 16th August, 2005, magnetic susceptibility survey was carried out at Black Patch, Alciston, East Sussex (located at NGR TV 4938 0333).

1.2 Magnetic susceptibility survey at Black Patch was undertaken on behalf of Mr. Richard Tapper with a specific brief to locate and plot anthropogenic burning activities.

1.3 The survey was carried out over an archaeologically excavated area on downland at an elevation of approximately 120 metres AOD.

1.4 At the survey location the immediate solid geology is Chalk, overlain by Rendsina type soils. Although previously cultivated, the Rendsina soil is presently under grassland.

1.5 The magnetic susceptibility survey and subsequent report has used guidelines set out by English Heritage (EH, 1995).

2.0 Survey Methods

2.1 Relative magnetic susceptibility values (Challands 1992,35) were logged at 0.5 metre increments on a grid composed of 10 by 10 metre squares.

2.2 A TR Systems Limited Magnetic Susceptibility Meter, linked to a 200 millimetre diameter field coil, directly logged the relative magnetic susceptibility values.

2.3 Over the soil stripped surface a total of 676 magnetic susceptibility values were logged. Null readings were recorded where baulks and un-excavated areas were encountered.

3.0 Data Processing

3.1 All of the numerical data was oflloaded into a PC computer in the pattern recorded within the 10 metre grid squares. The individual 10 metre squares were merged together to form a mosaic of the data, located to the site grid co-ordinates.

3.2 The magnetic susceptibility measurements taken on the exposed archaeological/geological deposits ranged in value between a minimum of <1 MS UNITS to a maximum of 127 MS UNITS. The mean of the total data is 6.76 MS UNITS with a standard deviation of 12.424 MS UNITS.

3.3 Figure lA is a grey scale diagram displaying the unfiltered data, which has been slightly clipped by reducing a single abnormally high value of 243 MS UNITS to 150 MS UNITS.

3.4 Figure 1B is a filtered grey scale diagram produced from the slightly clipped data as detailed in 3.3 above.

3.5 The coloured diagram (Fig. 2) displays the data by means of colour coding the values. The values are the same as those displayed on the grey scale diagrams (Fig. 1). Colours allocated to values range from <1 (dark blue) to lighter blue, shades of green, through yellow, orange and red to dark reds for the maximum values (up to 127 MS UNITS).

3.6 Figure 2A displays the colour coded unfiltered data and 2B the colour coded filtered data.

4.0 Interpretation of the data

4.1 The magnetic susceptibility values recorded at Black Patch are generally low, which is to be expected, as the chalk substrate is not haematite rich. The recorded on-site values of the natural chalk average 3 MS UNITS, and the topsoil measures around 14 MS UNITS. The archaeological deposits generally have significantly higher magnetic susceptibility values. Higher MS variations, within generally higher MS values of the occupation soils, indicate the locations of more intensive anthropogenic activities, usually involving the use of fire.

4.2 The following survey interpretations refer to magnetic susceptibility anomalies numbered 1 to 9 on the colour coded diagram, figure 3 :-

1) Very high MS values - Locations of magnetically enhanced soils, possibly hearths.

2) High MS values - General enhancement of occupation areas.

3) Slightly higher MS values - Soils enhanced by mixing with high MS soils.

4) High MS value - Single reading taken at a higher level within trench.

5) Low MS values - Natural chalk surface.

6) Very high MS values - Although lying within general enhancement areas, the very high values are situated in baulk locations and should be regarded with caution.

7) Low MS values - Natural chalk surface.

8) Very low MS values - Pure natural chalk.

9) High MS values - General enhancement of occupation areas. When viewed with (2) the occupation zone forms a crescent shaped area.

5.0 Conclusions

Generally low magnetic susceptibility values were recorded at the Black Patch Bronze Age settlement site, 2005 excavations. The low magnetic susceptibility values were to be expected, due to the site being founded on the chalk.

At Black Patch the generally low MS values did not preclude the validity of the survey. Occupation areas were detected which mirrored the location of the apparently slope positioned structures. Higher values within the occupation areas suggested the position of hearths and the more discrete (slightly higher values) may represent domestic activity locations. Magnetic susceptibility defined the occupation areas. Within the excavated / survey area no traces of occupation could be detected to the south, to the east slightly higher MS traces led to the 'pond'. Situated beyond the main focus of settlement, the few meters of excavation to the north did not show any evidence of occupation. The area to the west was occupied by a metalled track and was not excavated or MS surveyed.

As the site was constructed on chalk, Black Patch was at first thought to be unpromising for magnetic susceptibility survey. Sufficiently variable MS values enabled useful archaeological interpretations to be made.

Adrian Challands - 6th September, 2005

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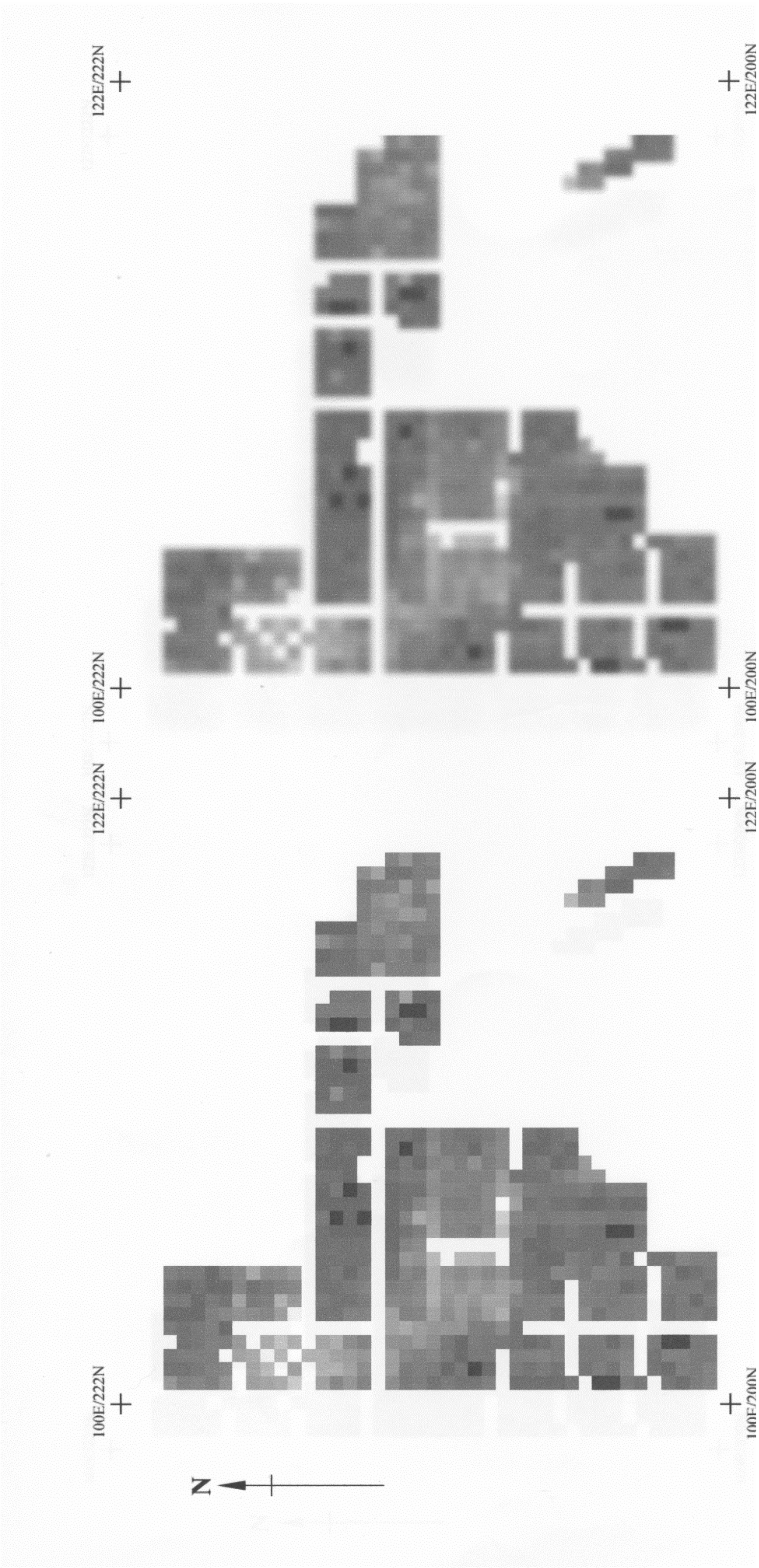

Fig. 1 Grey scale diagrams

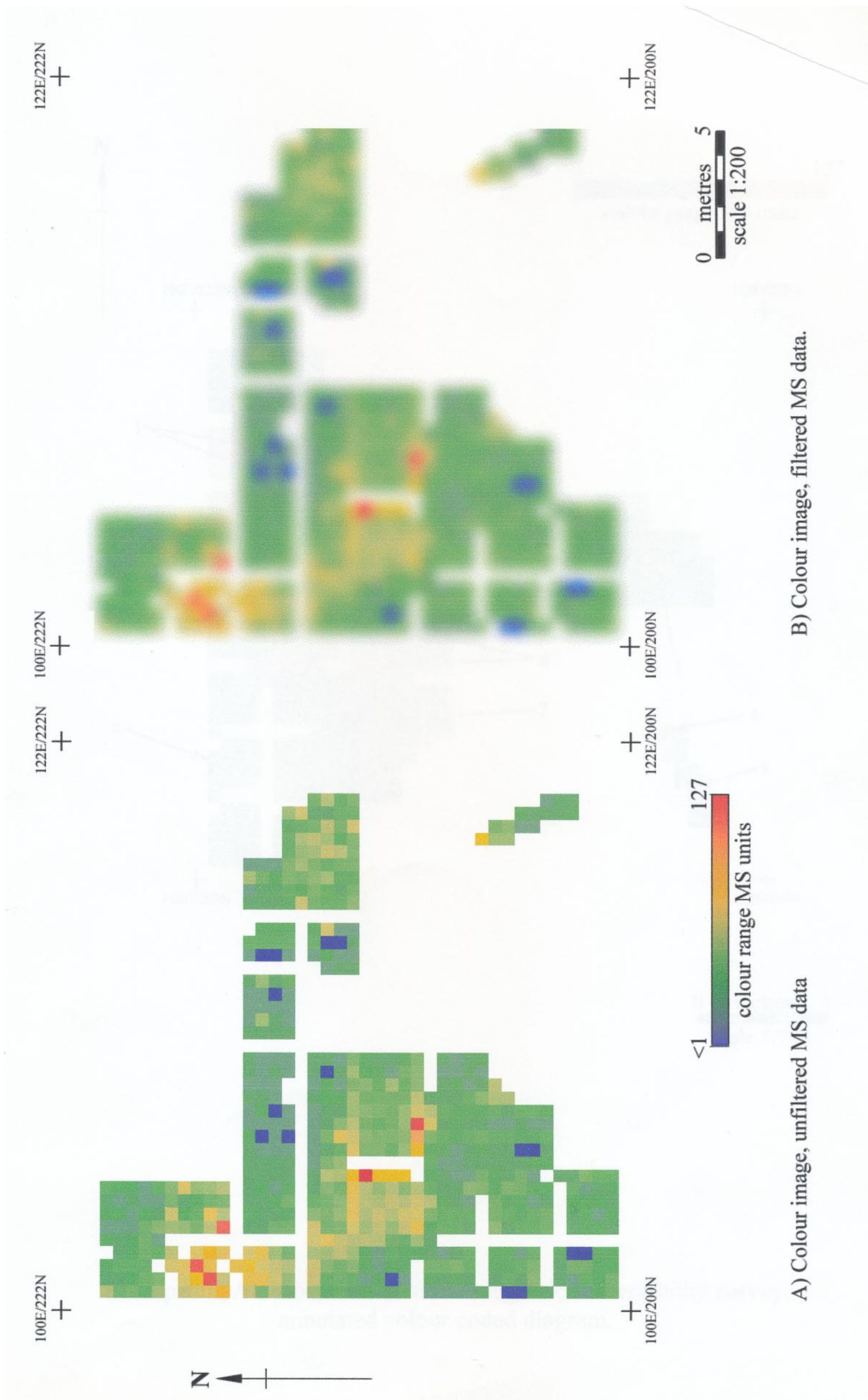

Fig. 2 Black Patch, Alciston, East Sussex- magnetic susceptibility survey, colour coded diagrams.

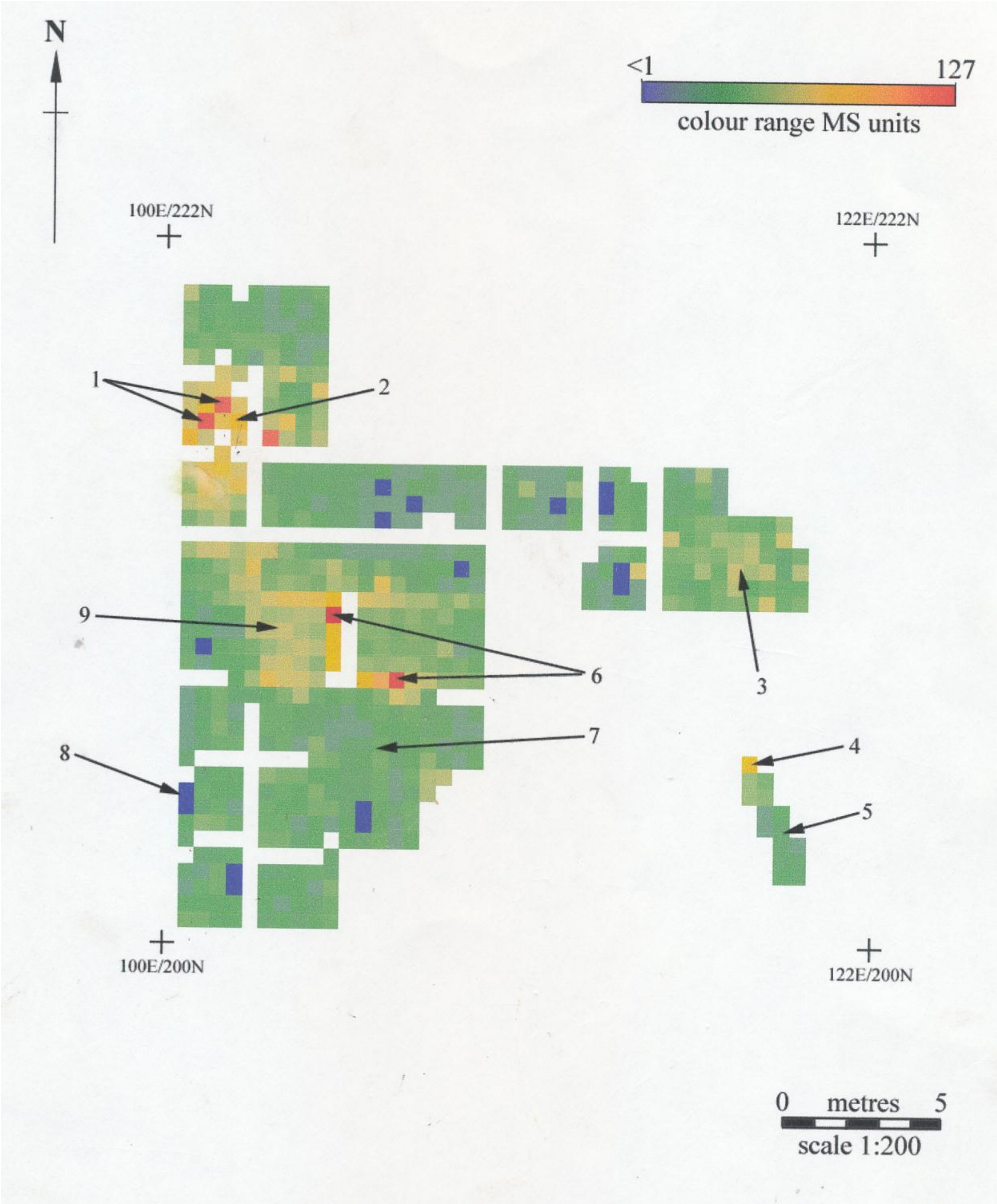

Fig. 3 Black Patch, Alciston, East Sussex- magnetic susceptibility survey, annotated colour diagram.

THE POTTERY REPORT

R. Q. Tapper

Definition of fabric types

The fabric types within each series were established and defined on the basis of macroscopic inspection in conjunction with microscopic analysis at X20 magnification. All inclusion/temper sizes are classified using the Wentworth sedimentary scale and descriptive terms (Prehistoric Ceramics Research Group 1992, 35). Density charts (Prehistoric ceramics Research Group, 1992, Appendix 3) were used to standardize assessment of inclusion/ temper present in fabric matrices.

Middle and Late Bronze Age fabrics

Flint-tempered fabrics.

F1. Thick-walled very coarse flint-tempered fabric.

Sparse (5-7% density) flint temper comprising small pebble (4-8mm), granule (2-4mm) and coarse sand (c. 1mm) size pieces; matrix colour/firing- buff oxidized exterior and interior surfaces with evidence of light finger/smoothing on both sides, mostly buff oxidized core but occasional black unoxidised core; sherd thickness c.14 mm.; hardness-hard.

F2. Thinner walled very coarse flint tempered fabric.

Sparse (5-7 density) flint temper comprising small pebble (4-8 mm), granule (2-4 mm) very coarse sand (c. 1mm) and coarse sand (c. 0.5mm) size pieces; matrix colour/firing -mostly buff or brown oxidized exterior and interior surfaces, occasional black unoxidised interior, mostly buff or brown oxidized core, some black unoxidised cores; sherd thickness c.10mm: hardness-hard.

F3. Thinner walled medium coarse flint tempered fabric.

Moderate (10% density) flint temper comprising of granule (2-4 mm) very coarse sand (c. 1mm) and coarse sand (c. 0.5mm) size pieces; matrix colour/firing- buff oxidized exterior and interior surfaces with evidence of light finger/smoothing on both sides, buff oxidized core; sherd thickness c. 10 mm; hardness-hard.

F4. Thinner walled fine to medium fine flint tempered fabric.

Moderate (15% density) flint temper comprising of very coarse sand (c1mm), coarse sand (c.0.5mm) and occasional granule (c. 2mm) size pieces; matrix colour/firing buff to dark brown oxidized exterior and interior surfaces with evidence of light finger/smoothing on both sides, buff to dark brown oxidized core; sherd thickness c. 8mm; hardness-hard.

F5. Thinner walled fine flint tempered fabric.

Sparse (7% density) flint temper comprising mostly coarse sand (c. 0.5mm) occasional very coarse sand (c. 1mm) sized pieces; colour/firing-medium to dark brown oxidized exterior and interior surfaces, with some evidence of burnishing, medium to dark brown oxidized core; sherd thickness c 6mm. hardness-hard .

Flint and Grog tempered fabric.

FG1 Medium-fine flint and grog tempered fabric.

Moderate (10% density) flint temper comprising coarse sand size (c. 0.5mm) pieces together with a moderate amount (10% density) of granule size (c. 1.5mm) pieces of grog; matrix colour/firing -medium to dark brown oxidized exterior and interior surfaces, medium to dark brown oxidized core; sherd thickness- 5mm; hardness-very hard.

The Bronze Age pottery: clay and temper sources

Surface Clay-with-flints deposits occur directly to the north of the site and were probably used for the Middle Bronze Age (Deverel-Rimbury or D.R.) pottery. The ubiquitous nature of these deposits on the South Downs combined with the near impossible task of sourcing flint forbids exact statement to be made, but the proximity of the source would indicate its likely use.

Thin sections of 3 pieces of pottery from Prof. Drewett's excavation were made by Lys Drewett, who observed that the "Contents of all three sherds are entirely consistent with each other and with local geological sources" (Drewett, L. 2007, 2.) see appendix 2 The clays and temper used in Late Bronze Age (Post-Deverel-Rimbury P.D.R.) pottery were sometimes sourced from different areas, for instance, where the clay may already have inclusions in it (Seager Thomas 2008, 43). However, the solely flint tempered P.D.R pottery found at Black Patch and the relatively small quantity, indicating that it was probably not made on site, make attempts at sourcing unrealistic.

The basis of dating the fabric types

The typological associations of the fabrics indicate that Fabrics F1, F2, F3, and F4 are MBA, F5 is LBA and Fabric FG1 is Romano-British.

The Black Patch Middle Bronze Age pottery

Assemblage form decoration and technology elements

R1 Turned-over rim

R2 Flat-Topped rim

R3 Rounded rim

A1 slightly emphasised carination

D1 Fingertip impressed

D2 Fingernail impressed

D4 Incised decoration

D5 Plain unperforated applied lug

D6 Applied cordon or fillet

Table 1. Ellison and Tapper fabric types

Ellison Type	Elements	Fabric 1	Fabric 2	Fabric 3	Fabric 4
1	R1	0	0	0	4
2	R2	1	4	3	0
2	R3	0	2	2	2
2/3	D5	0	1	0	0
6	R2	0	2	0	0
6	A1	0	0	0	1
7	D4	0	0	0	1
8	R2	1	0	0	0
9	D1	1	1	1	1
9	D2	0	2	2	0
10	D6	0	4	0	0
Unknown	B1	2	0	0	0
Unknown	T1	0	1	0	1

The round house contexts, together with the external pits and post hole features can be dated to the Middle Bronze Age on the basis of their associated Middle Bronze Age pottery assemblage.

The following discussion uses the typology of Sussex Middle Bronze Age pottery devised by Ellison (1978) and Hamilton (2002, 42-6).

Although a large percentage of the assemblage was too small to assign to both form and in some cases also to fabric the following forms were recognized.

Sussex Type1- Shapeless baggy jar, sometimes bearing turned-over rim. (R1)

Sussex Type 2- Ovoid or straight-sided jar with plain unperforated applied lugs at or above the point of maximum diameter. (R2)

Sussex Type 3 ? -Ovoid jars with plain, unperforated lugs and outflaring rim. (D5)
Ellison Type 6 -Plain urn with slack biconical profile and slightly emphasized shoulder.
(A1)
Ellison Type 7- Globular jar with bar-handles and incised geometric decoration. (D4)
Ellison Type 8- Plain bucket shaped urn.(R2)
Ellison Type 9 – Bucket urn with row of finger-tipping applied directly to the body a short distance below the rim.(D1,D2)
Ellison Type 10. -Plain bucket-shaped urn.(D6) (Ellison, 1982, 362)
Ellison Type 1 jars were recognized by several simple turned over rims. Types 2 and 3? were recognised by the occurrence of flat-topped and rounded rims and several large ovoid shaped sherds and the presence of sherds with round applied bosses. Type 6 was recognized by sherds with an emphasized carination. Type 7 was recognised by incised decoration. Type 8? Was recognised by a flat rim. Type 9 was recognised by finger tipped and finger nail impressions Finally Ellison type 10, was recognised by sherds with a raised applied finger impressed cordon. Types 3 and 8 are suggestive due to the small number of sherds with these features. However, it should be noted that although it is possible to identify individual types there are no sharp divisions between the different forms and that fabric type does not point to vessel category (Seager Thomas, 2008, 29)
The fabric 5 assemblage was very small however a couple of Post Deverel- Rimbury features were discernible. These were finger impressed decoration on rim and body sherds of a hemispherical bowl with evidence of burnishing.

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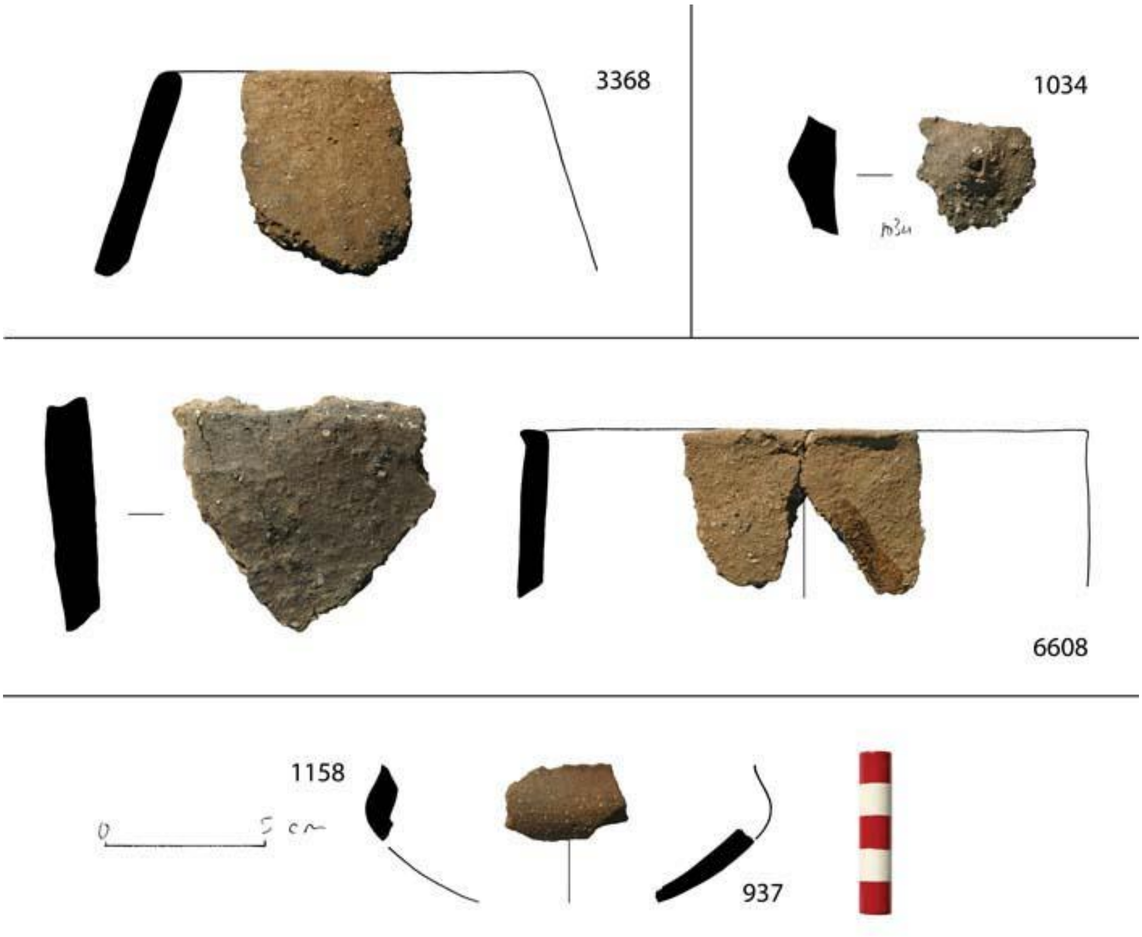

Fig. 1. Photograph of pottery sherds from excavation. (Photo Seager Thomas).

S.F no.3368 Ellison Type 2 Fab2. Found in pit 2125.context 2230.

S. F no 1034 Ellison Type 3 Fab 2. Found above flint level in Hut A. context 223.

S.F. no 6608 Ellison Type 1 Fab 1 and 3. 2 Found together on chalk floor of Hut A context 2271

S.F. nos 937 and 1158, Fab 5.Decorated Post- Deverel-Rimbury Hemisperical bowl with burnishing.

BLACK PATCH: THE EXCAVATED FLINTWORK FROM THE 2005 AND 2006 EXCAVATIONS

By: N. Haken.

1. Summary

The site of Black Patch has been subject to plough damage, especially the shallow features of hut B and C which have been truncated. The spread of flintwork over the site and through the upper contexts support this.

The majority of the flintwork recovered is from the area of hut A, which has been partially protected by the overlying footpath, and the hut terrace which has resulted in the recovery of large amounts of semi in situ flintwork that has undergone transformation processes, sorting them down the profile and presumably also downslope. This area is considered by the director to have been a workshop area undertaking specific tasks, replacing the earlier roundhouse after it went out of use. Contexts 2215, 2216 and 2235 from this area have the heaviest concentration of debitage and tools.

The excavated flintwork assemblage from the 2005 and 2006 excavations comprises 4529 pieces of humanly struck flint, with a further 100 pieces from the augering, lynchet, test pits and trial trenching.

2. The raw material

1. The majority of the flintwork recovered from the excavation was manufactured from white patinated flint with occasional white to buff patches, and with thin light brown cortex, and is typical of the local downland flint.

2. Light blue grey to white, similar to 1, but with a blue occasional patches, local flint.

3. Light blue grey mottled flint, from clay-with-flints, the nearest deposit is located some 650 metres to the north east.

4. Dark grey to dark blue, from clay-with-flints.

5. Yellow orange surface patination on white, probably iron staining.

6. Cortical nodules, round.

7. Fire-cracked.

8. Beach pebbles.

See Table 1 for percentage of flint types.

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Table 1 Percentage of flint types

No	Type	%
1	White	51.9
2	Blue grey to white	38.1
3	Light blue grey	6.2
4	Dark grey to dark blue	.6
5	Yellow orange	.5
6	Cortical nodules	1
7	Fire-cracked	1.5
8	Beach pebbles	.2

Table 2 Total excavated flintwork

Hard hammer-struck flake	3190
Soft hammer-struck flakes	319
Hard hammer-struck blades	15
Soft hammer-struck blades	46
Bladelets	20
Core tablet	1
Fragments	302
Chips	154
Chunks	8
Single-platform flake cores	5
Two-platform flake cores	17
Multi-platform flake cores	99
Bladelet core	3
End scraper	27
Side scraper	17
End and side scraper	5
Hollow scraper	3
Notched scraper	9
Disc scraper	3
Horned scraper	2
Piercers	8
Cutting flakes	113
Knives	6
Retouched flakes	72
Hammerstone	2
Round cortical nodules	44
Beach pebbles	8
Architectural flint	31
Total	4529

4.Flintwork summary

Debitage makes up 92.9% of the total assemblage. See Table 3.

Table 3. Debitage. n = 4179	% of total debitage
Flakes, blades, bladelets:	
Hard-hammer struck	76.7
Soft-hammer struck	9.2
Fragments, chips and chunks	11.1
Cores	3

Remaining cortex on hard and soft hammer flakes. See Tables 4 and 5.

Table 4. Hard-hammer struck flakes: n=3190	
% of cortex remaining	% of total
100 (primary)	3.5
90 (secondary)	3.3
80 (secondary)	3.7
70 (secondary)	1.5
60 (secondary)	2.1
50 (secondary)	3.8
40 (secondary)	5
30 (secondary)	4.1
20 (secondary)	7.2
10 (secondary)	9.1
0 (tertiary)	56.7

Table 5. Soft-hammer struck flakes: n=319	
% of cortex remaining	% of total
100	2.2
90	1.6
80	2.2
70	0.3
60	0.3
50	2.2
40	4.1
30	1.9
20	5
10	9.4
0	70.8

Percentage of cortex remaining on cores. See Table 6.

Table 6. Number of single-platform cores. n=5	% of cortex remaining
1	40
2	30
2	0
Number of two-platform cores n=17	
1	50
2	40
2	30
4	20
2	10
6	0
Number of multi-platform cores n=99	
4	60
4	50
7	40
17	30
20	20
12	10
35	0

Implements make up 5.9% of the total assemblage. See Table 7.

Table 7. Implement type. n = 267	% of total implement
End scrapers	10.1
Side scrapers	6.4
End and side scrapers	1.9
Hollow scrapers	1.1
Notched scraper	3.4
Disc scraper	1.1
Horned scraper	0.8
Piercers	3
Cutting flakes	42.3
Knives	2.2
Retouched flakes	26.9
Hammerstones	0.8

5. Flintwork analysis

All flintwork is typical of Middle to Late Bronze Age unless otherwise stated.

Debitage and cores

Debitage: 23 Mesolithic bladelets and bladelet fragments with parallel ridges. 3570 blades and flakes, nine blades exhibit evidence of platform preparation and appear to be Early Neolithic. 464 fragments, chips and shattered pieces were collected.

Cores: Two Mesolithic single-platform bladelet cores, with parallel ridges, both well worked out, one broken.

Three single-platform cores, one with 40% cortex remaining.

17 two-platform cores all have some evidence of overhanging platform, multi directional flake scar removals, and hinge terminations.

99 multi-platform cores, all have some evidence of overhanging platform, multi directional flake scar removals, and hinge terminations. Two tertiary cores have evidence of fire-cracking.

One core rejuvenation flake, rare in later prehistoric assemblages and probably an accidental by-product of the knapping process.

Implements

End scrapers: 27 mostly with areas of cortex remaining and abruptly retouched, four are made on broken flakes, and one on a primary flake.

Side scrapers: One Early Neolithic, manufactured on a soft hammer flake, with abrupt retouch.16 mostly with varying degrees of cortex remaining and abruptly retouched, two are made on broken flakes, two retouched on the ventral side, one utilising a primary flake, and one utilising an earlier flake with retouch penetrating the patina.

Side end scrapers: One Mesolithic/Early Neolithic with abrupt retouch along lateral side and distal end on ventral side. Four on hard hammer flakes with abrupt retouch along one lateral side and distal end, one with butt broken off.

Disc scrapers: Three Early Neolithic, with abrupt and semi-abrupt retouch around the convex distal end and lateral edges, extending between 80-90% around the circumference.

Hollow scrapers: Three with abrupt retouch, two on broken flakes, two manufactured on distal end. One with retouch on opposite lateral side.
Notched scrapers: Nine with abrupt retouch forming the notch, one on distal end of a flake. Two with retouch along lateral side, one along opposite ventral side.
Horned scrapers: Two manufactured on hard hammer flakes, with deep concave area removed from the distal end, leaving two horns that project forward and are narrowed. One type A, with retouch between the horns, and down one lateral edge. One type B, with retouch between the horns, and along both lateral edges (Butler 2005, p183).

Piercers: One Early Neolithic with platform preparation, with abrupt retouch along both lateral edges to form a point. Seven manufactured on squat hard hammer flakes, abrupt retouch forming the tip, one on distal end, two on lateral side, three lateral side and distal end worked to form a point, one of which is made on the ventral side.

Miscellaneous retouch: 72 flakes exhibiting small areas of abrupt retouch, removing sharp areas to aid handling, and probably used as expedient tools, one of which the retouch cuts through earlier patination.

Knives and cutting flakes: Six knives on long flakes with abrupt retouch along one lateral side, and heavy use wear along opposite side.108 flakes with evidence of either or retouch and use/wear along one or other lateral side, or end. 88 with side use/wear, 11 with end use/wear, 9 with side and end use/wear.

Large flake scrapers with retouch: 5 larger flakes with abrupt retouch. One 16cm long, one 14cm long, one 10cm long, all with abrupt retouch along one lateral side and use wear on the opposite. One 15cm long, with abrupt retouch along lateral edge, around distal end and partly back down other side. One 12 cm long with use wear on both ends.

Large cutting flake/chisel: One large hard hammer flake, with a sharpening flake removed from the distal end, with small area of retouch and use wear along the edge.

Arrowhead: One Late Neolithic/Early Bronze Age fancy barbed-and-tanged arrowhead with invasive retouch, Sutton type, A, G (Greene 1980).

Beach pebbles: 9 beach pebbles were recovered

Cortical nodules: 37 cortical nodules, all similar in size, nearly round, some with natural protuberances removed, possibly collected for sling shot.

Hammerstones: 2 flint nodule hammerstones, with surface impact areas
Architectural flintwork: 31 pieces of flint that have been modified by flake removals. These all appear to have been deliberately prepared by removing the ends of cylindrical nodules at right angles, or the removal of at least one or more faces and ends, flattening faces and 'squaring', up large nodules. Some of these pieces were used as packing stones in post holes, and the interpretation of the others is that they were probably utilised as part of the house structure.

6. Flintwork discussion

Earlier prehistoric presence in the area can be found from the recovery of Mesolithic and Early Neolithic tools and debitage.

Mesolithic activity is confirmed by the two single platform bladelet cores, 23 bladelets and bladelet fragments, which exhibit the technological processes of careful platform preparation by the removal of overhangs, and abrasion to strengthen the platform. This isolated the intended point of percussion before bladelet removal by soft hammer or a bone/antler punch. These are associated with microlith production intended for arrowheads used by hunter gatherers utilising the landscape.

Early Neolithic flintwork consists of nine blades and flakes still retaining evidence of careful platform preparation and soft hammer production, and the toolkit includes a piercer, knife, end scrapers, and 3 disc scrapers, all with abrupt retouch. These all suggest task specific activities probably relating to hunting, hide and leather work in the immediate vicinity.

The flintknapping technology in the Early and Late Bronze Age exhibits a decline in quality from previous periods, with a preference of hard hammer production. Cores lack any kind of platform preparation, and flakes were removed from any suitable platform, and then rotated until another platform was found, and the process repeated. Some cores have been extensively worked and others have only a few flakes removed.

Flakes vary in size but are consistent with the core technology, and display faceted striking platforms, with overhangs on the dorsal side. The striking platforms are large, indicating the cores were struck well away from the platform edge, and some show repeated striking was needed for removal. Evidence of miss hits, hinge fractures and multi directional scars can be seen from previous removals.

The assemblage is dominated by broad and squat un-retouched flakes that have varying amounts of cortex remaining, where careful core reduction was unnecessary and the need for predetermined production of tool blanks was small.

Tables 4, 5 and 6 indicate a higher proportion of flakes and cores without cortex, which is normally associated with careful core reduction in earlier prehistoric periods. It was noted that the cores with higher percentages of cortex were much larger than cores without and that, where usable, cores appear to have been reduced until no suitable platform was left and then discarded. The large size of some of the nodules used as cores may explain the higher percentage of tertiary flakes.

There are some flakes that have areas of retouch to blunt sharp edges to enable expedient use of the flakes, while other flakes seem to have been used in their natural state when needed, and then discarded.

Large flake scrapers and the cutting flake/chisel with areas of abrupt retouch, hint at heavier tasks being undertaken, probably farm related woodwork tasks.

Implements are dominated by scrapers manufactured on varying sizes and thicknesses of flakes, utilising small, large and fragments of flakes. The most common are end scrapers, manufactured mostly on cortical flakes with areas of abrupt retouch. Other scrapers include side scrapers, hollow scrapers and horned scrapers, all with areas of abrupt retouch.

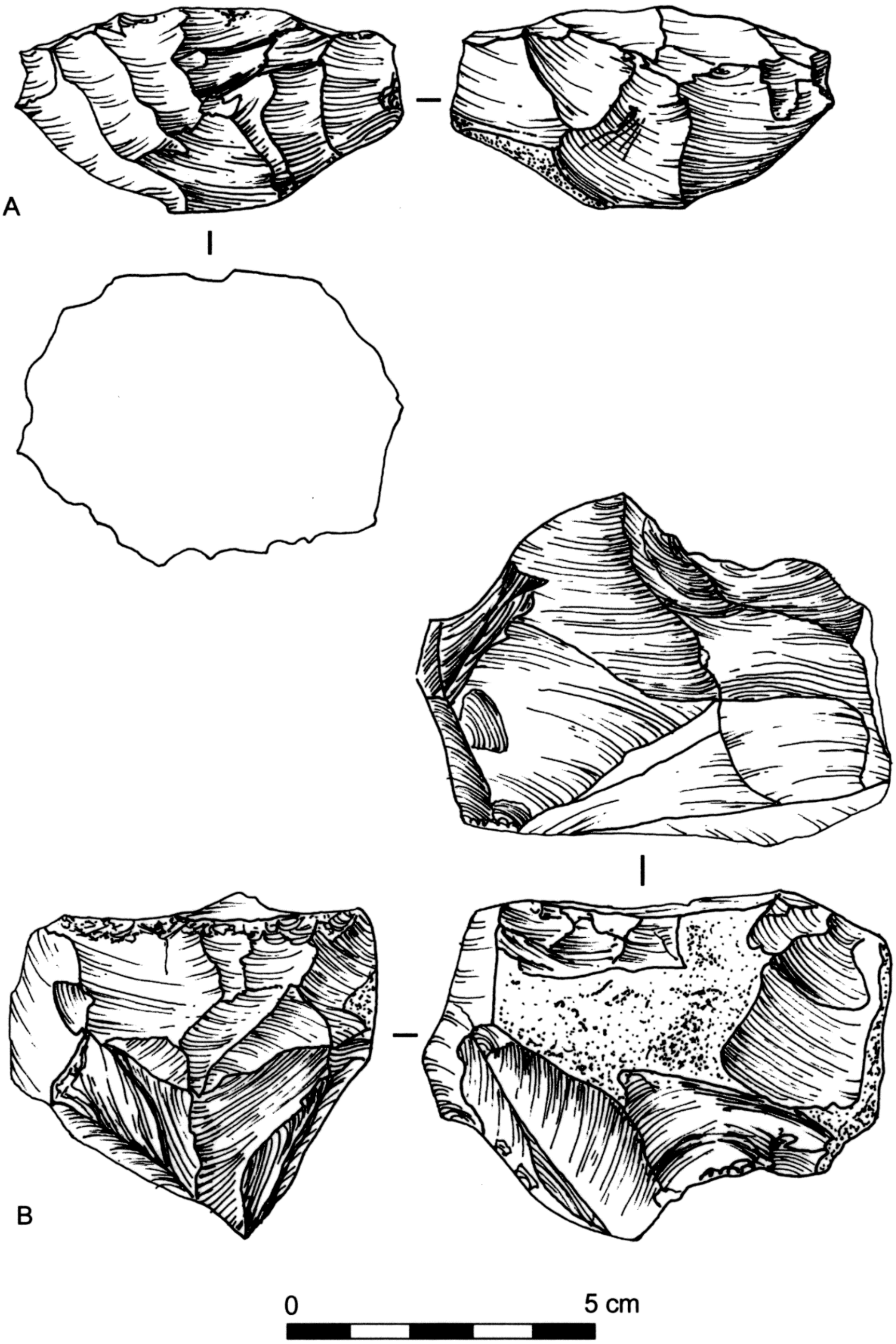
The two horned scrapers are quite rare pieces, and although they appear elsewhere on the South Downs in only small numbers, there seems to be a restriction on their distribution with a concentration of them from the Seaford / Alfriston area, where 14 horned scrapers were found at Rathfinny farm some 2km due south of Black Patch (Butler 2001, p218). These were probably utilised as woodworking scrapers, similar to a modern spokeshave. The two different sizes — one 25mm wide, the other 60mm wide — would suggest similar task related activity but with different sized product output, producing a round shaft some 30mm and 60mm diameter respectively, or part of.

The seven piercers are manufactured on short squat flakes where the piercer is on the lateral edge and on longer flakes where the point is on the distal end. Piercers are normally the second most common tool type found on later Bronze Age sites and the seven recovered contrast to the one awl found on hut platform 4, during the 1977-79 excavations at Black Patch (Drewett 1982, p373), and one borer found at Mile Oak Farm in 1989 (Rudling 2002, p2-35), while at Rathfinny Farm there were 12 piercers (Butler 2001, p218).

The excavated flintwork has similar parallels to P. Drewett's Black Patch excavation, with high numbers of flakes, workshop waste, cores, and similar tool types, although the increase in numbers of piercers and horned scrapers are similar to the surface finds from Rathfinny Farm.

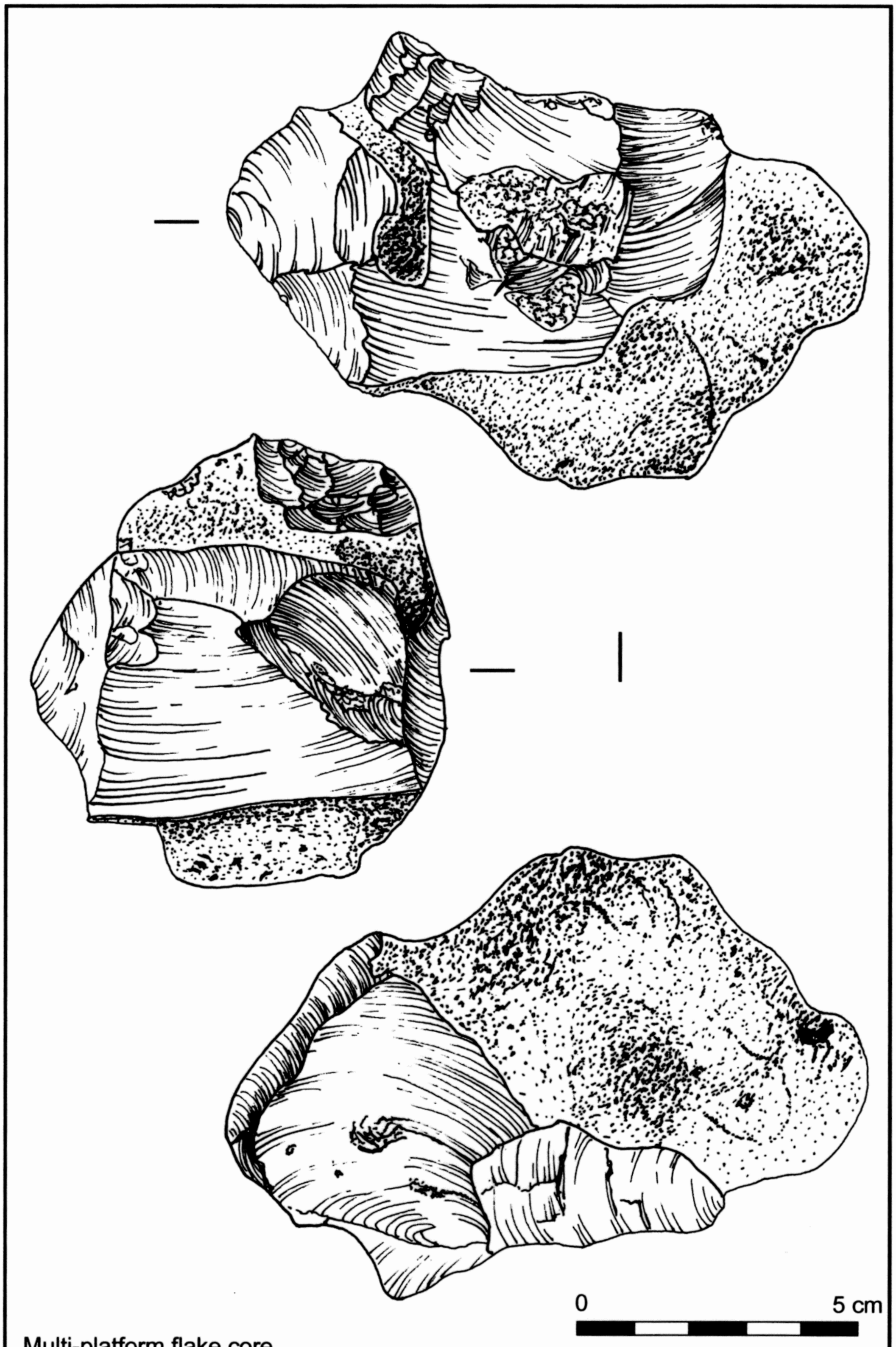
The assemblage is typical of Middle to Late Bronze Age settlement flintwork, and is associated with processing hide and animal products, organic material and crop related activities, in and around the farmstead and workshop.

7. Core illustrations



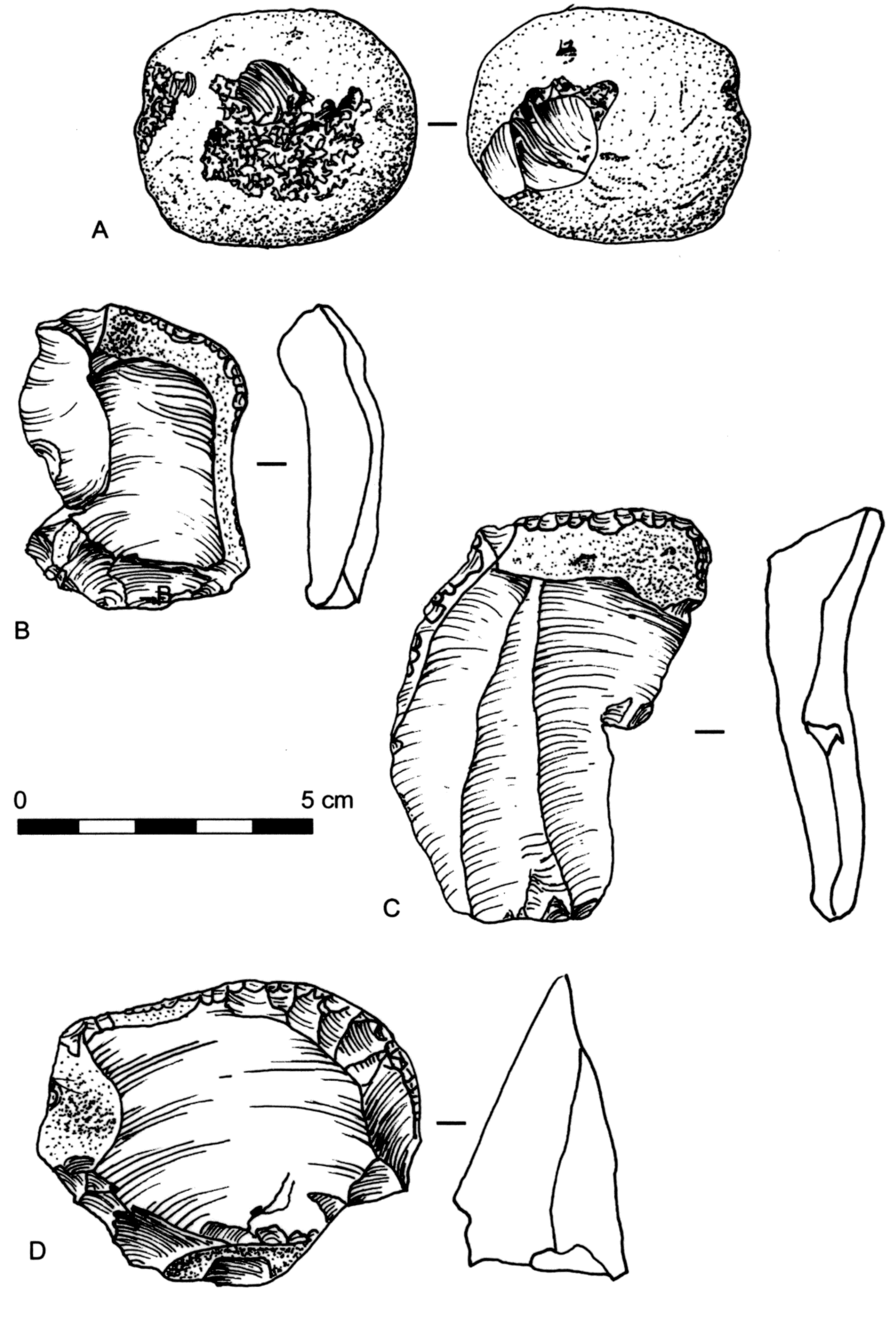
A: Single-platform flake core. B: Two-platform flake core

8. Core illustration



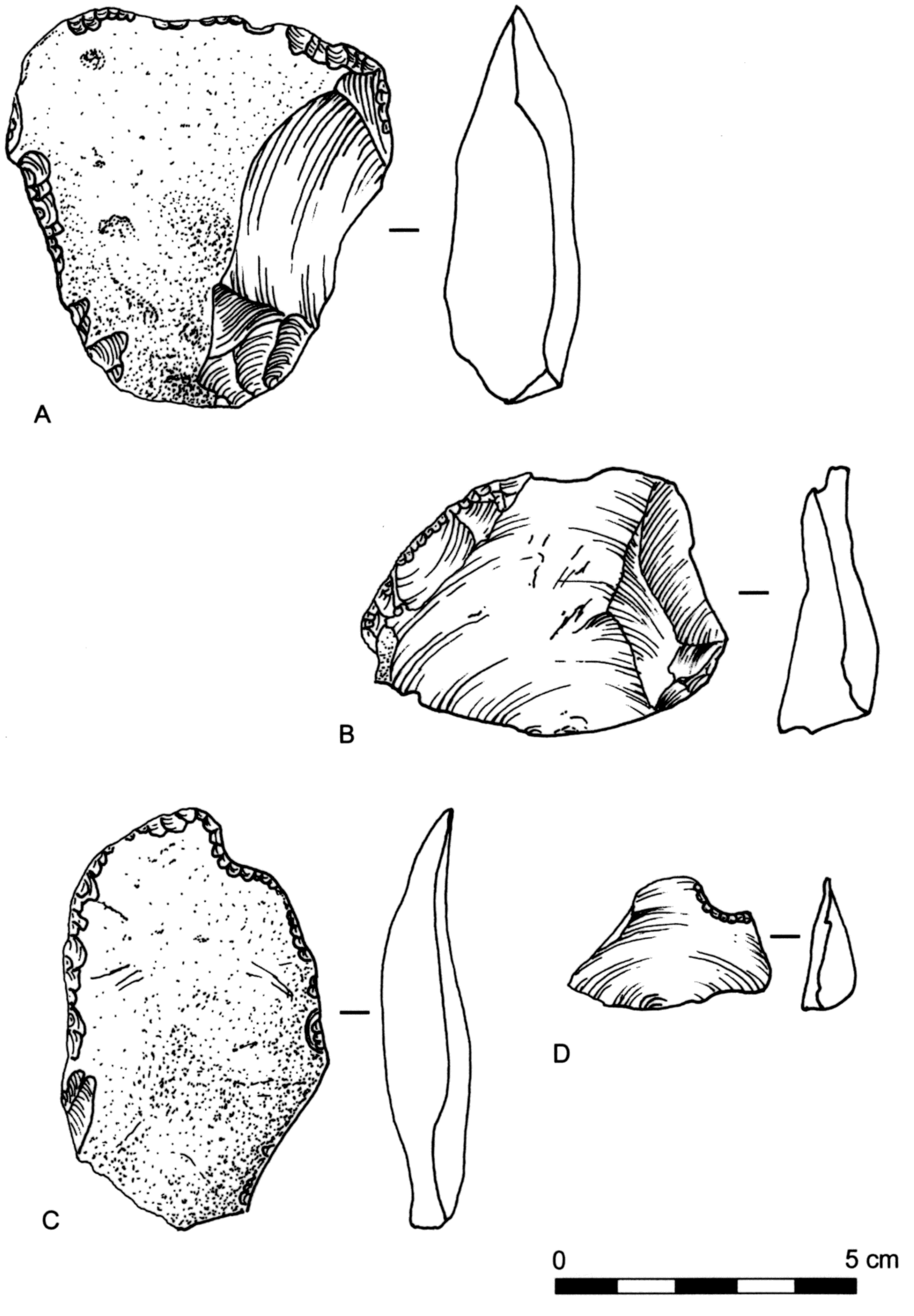
Multi-platform flake core.

9. Implement illustrations



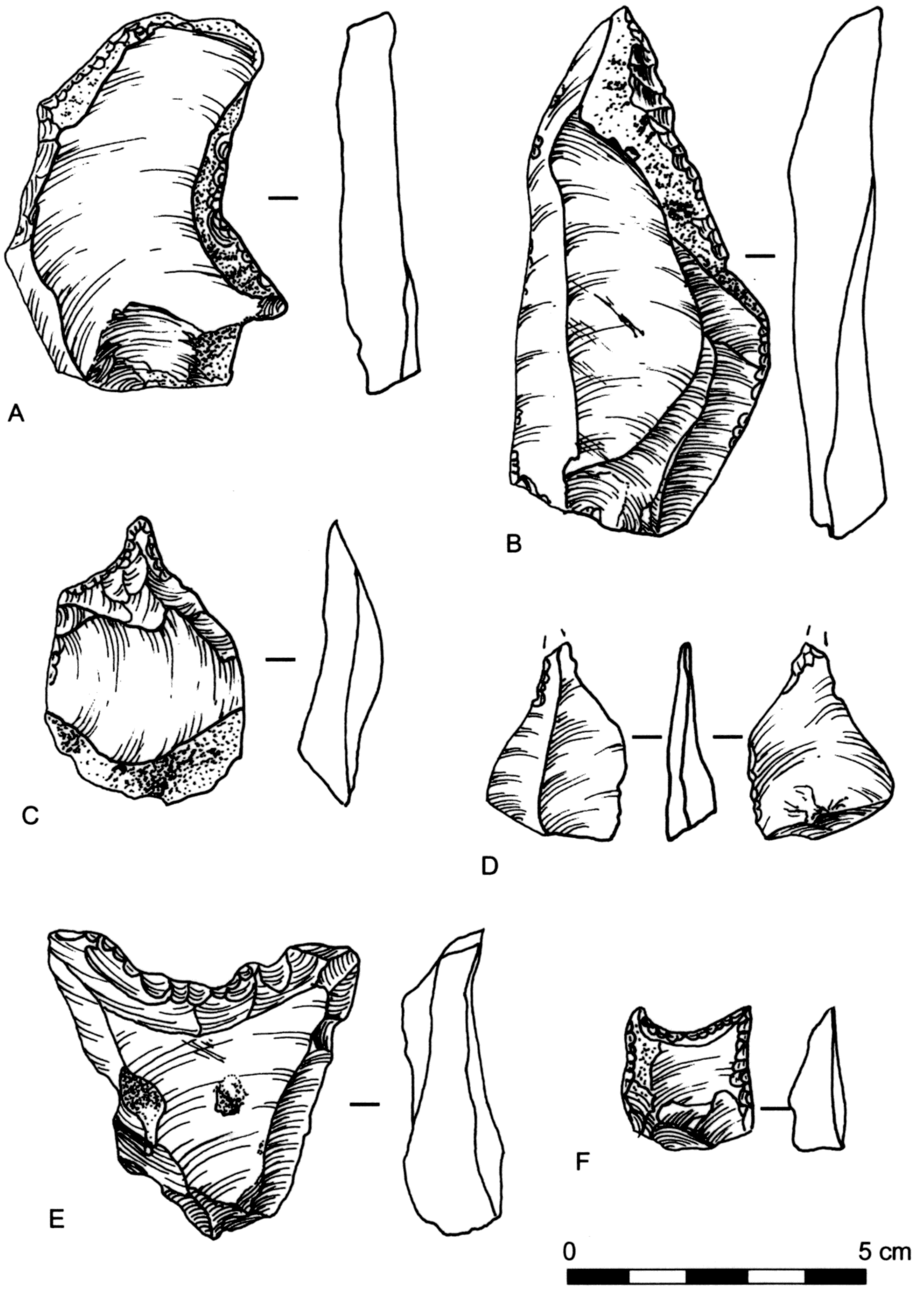
A: Hammer stone. B and C: End scrapers. D: Side-and-end scraper

10. Implement illustrations



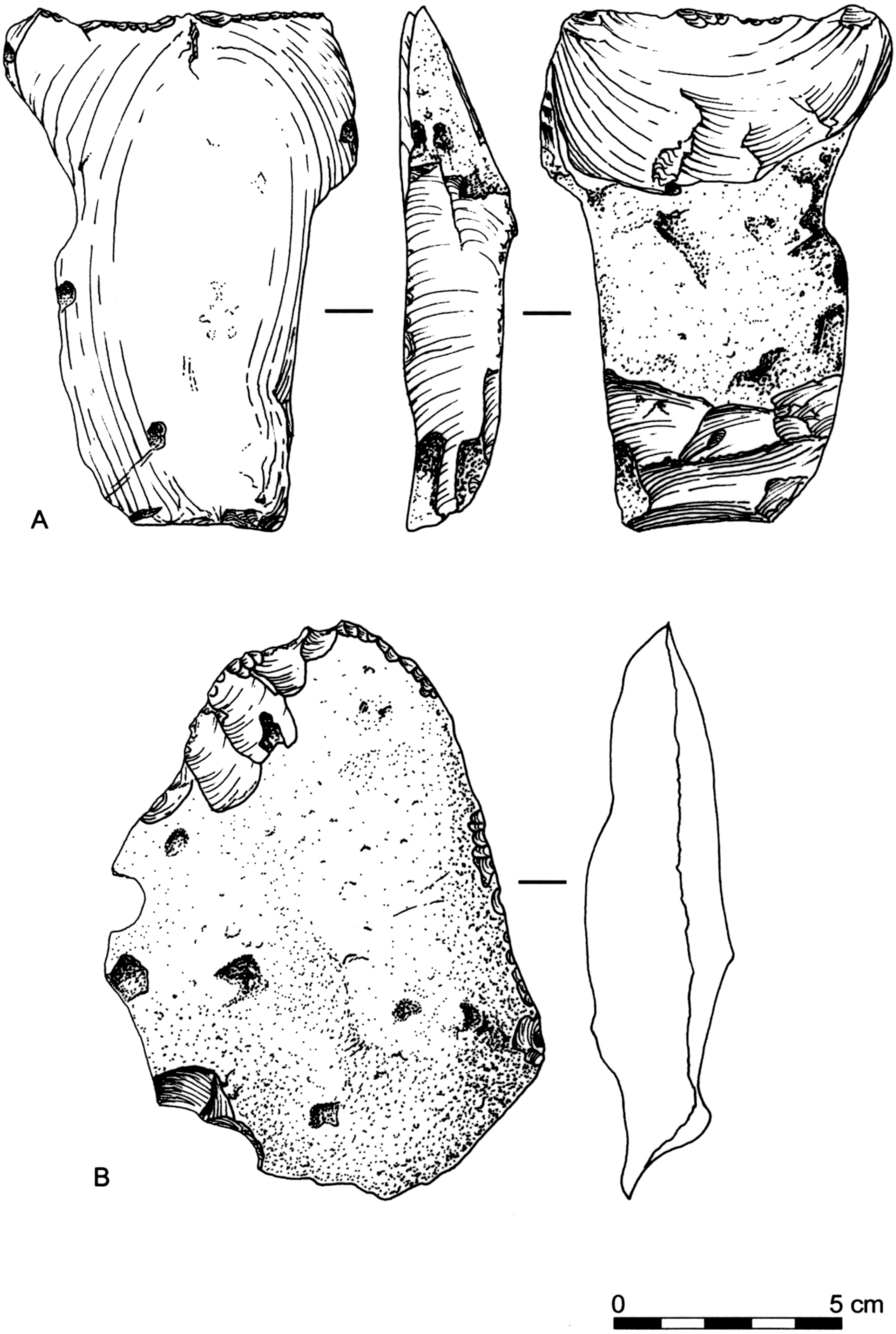
A and B: Side scrapers. C: Side scraper with utilised notch. D. Notched scraper.

11. Implement illustrations



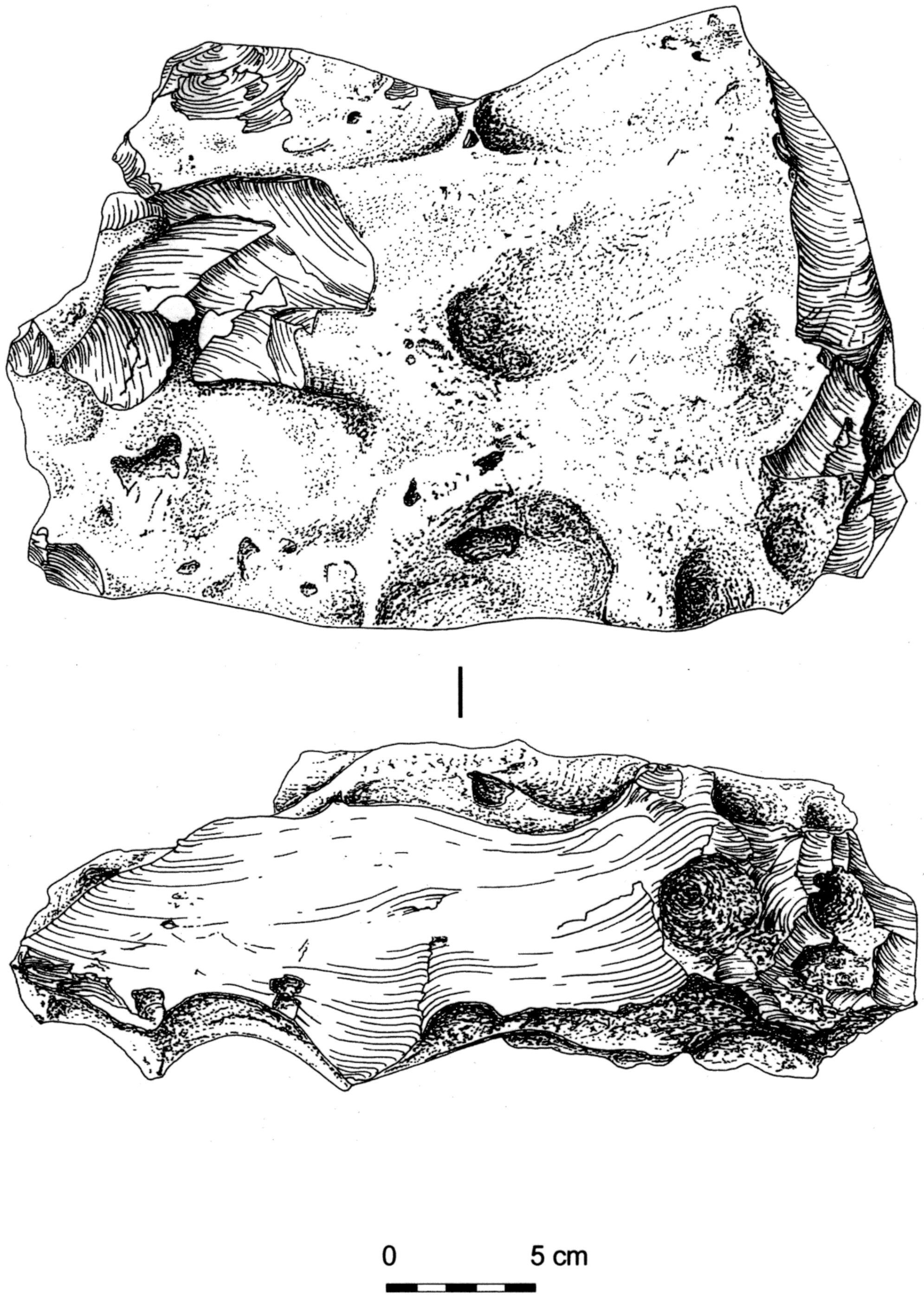
A : Hollow scraper. B: Cutting flake. C and D: Piercers. E: Horned scraper Type A .
F: Horned scraper Type B.

12. Implement illustrations



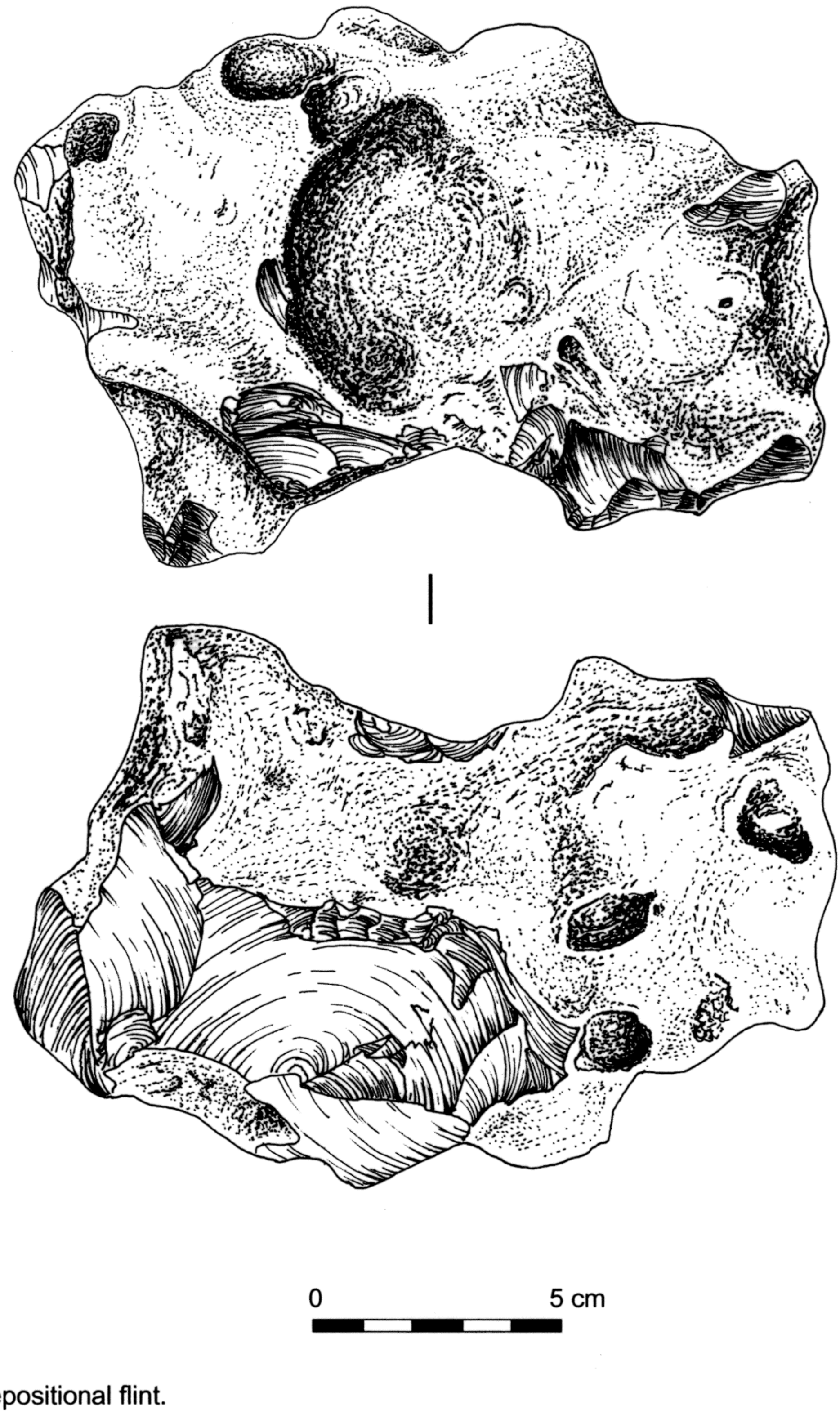
A : Chisel. B: Large cutting flake/scraper.

13. Pad stone illustration



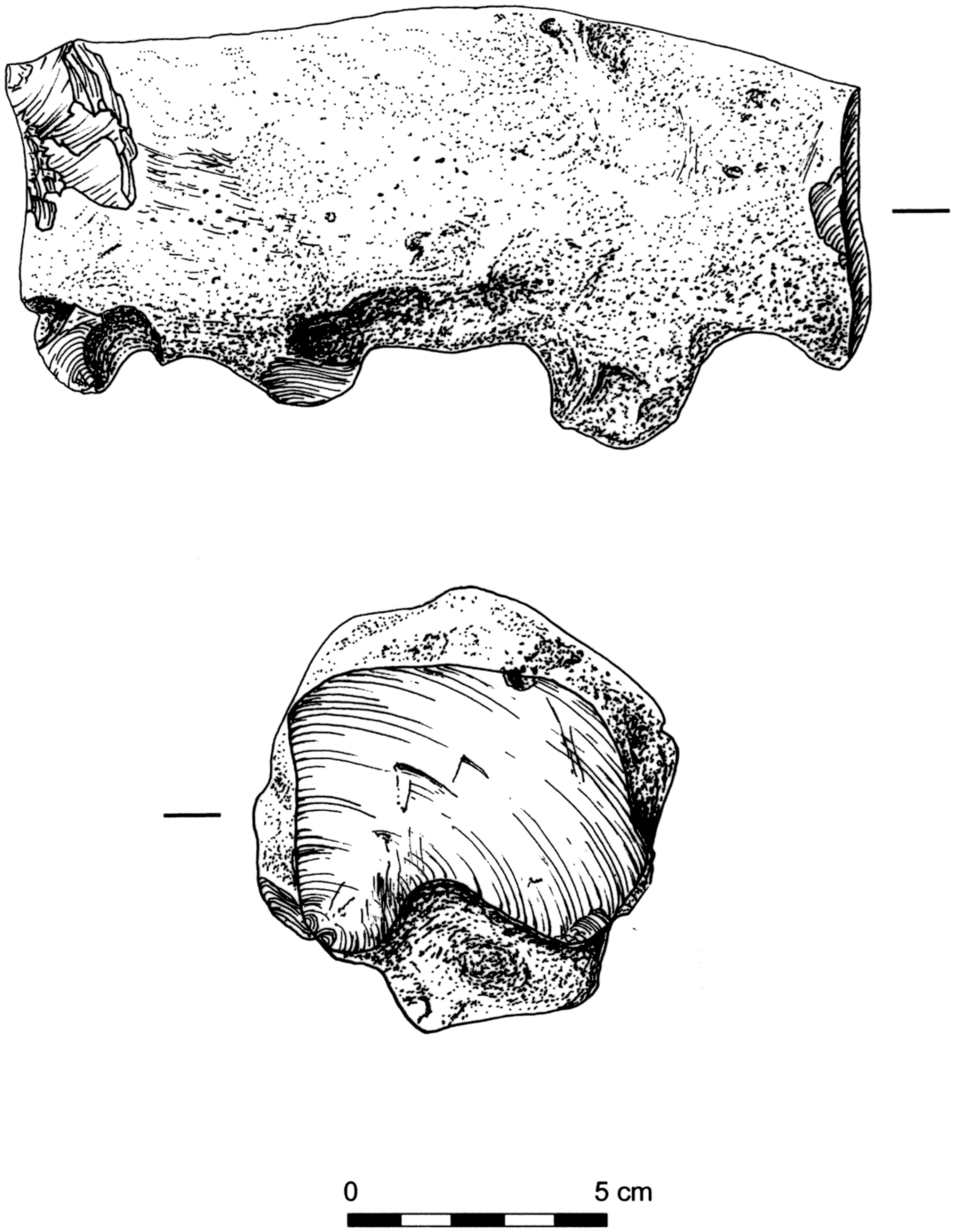
Large pad stone from post hole.

14. Depositional flint illustration



Depositional flint.

15. Depositional flint illustration



Depositional flint.

16. Auger finds

Debitage

Sixteen flakes, two blades with platform preparation, one fragment, and four fire cracked fragments, one probably a core.

Implements

End scrapers: two with abrupt retouch, one LNEBA, one LBA

Notched flake: One on a cortical flake, with abrupt retouch forming the notch on the lateral side.

Retouched flake: One with abrupt retouch using an earlier flake.

17. Lynchet 01

Debitage

Seven flakes and one blade, three fragments and four burnt fragments probably ENEO.

18. Lynchet 1

Debitage

Three fragments, one is burnt.

19. Trench 1

Debitage

Five flakes, one Early Neolithic bade fragment, one bladelet, one LBA two platform core, and one burnt fragment.

20. TP1

Debitage

23 flakes, 32 fragments of which 15 are fire-cracked, 2 cortical nodules.

Implements

Side end scraper: one LBA with abrupt retouch.

21. TP01

Debitage

23 flakes, six fragments of which two are fire-cracked and two beach pebble fragments. Two cortical nodules.

22. TPO2

Debitage
Two flakes and one fragment.

23. TPO3

Debitage
Nine flakes and one fragment.

Implements

Side scraper: one LBA with abrupt retouch.

24. References

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This report has been prepared from pre-sorted and selected flintwork supplied by the site director. An assessment of the assemblage was undertaken, with areas of retouch and use/wear viewed through eye lenses with a magnification of x10 and x20 and a full written classification archive consisting of 227 pages, and a excel table of the assemblage was produced and supplied with this report.

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01424 838338
December 2008

SELECTED FLINTWORK ANALYSIS

By: N. Haken.

Context 2271, sq 262J, special finds 6111- 6125.

Consisting of three cores, 16 fragments and one flake. All are fire-cracked and most of the fragments have evidence of previous flake removal and may have been cores before being burnt.

Large nodule.

The bottom of the nodule has had flake removals to flatten this area, small flake removals have then strengthened the side platform to allow large flake removals to the side. There has been some small flake removals from around the rim of the round hollow on one side.

FIELD WALKING FINDS.

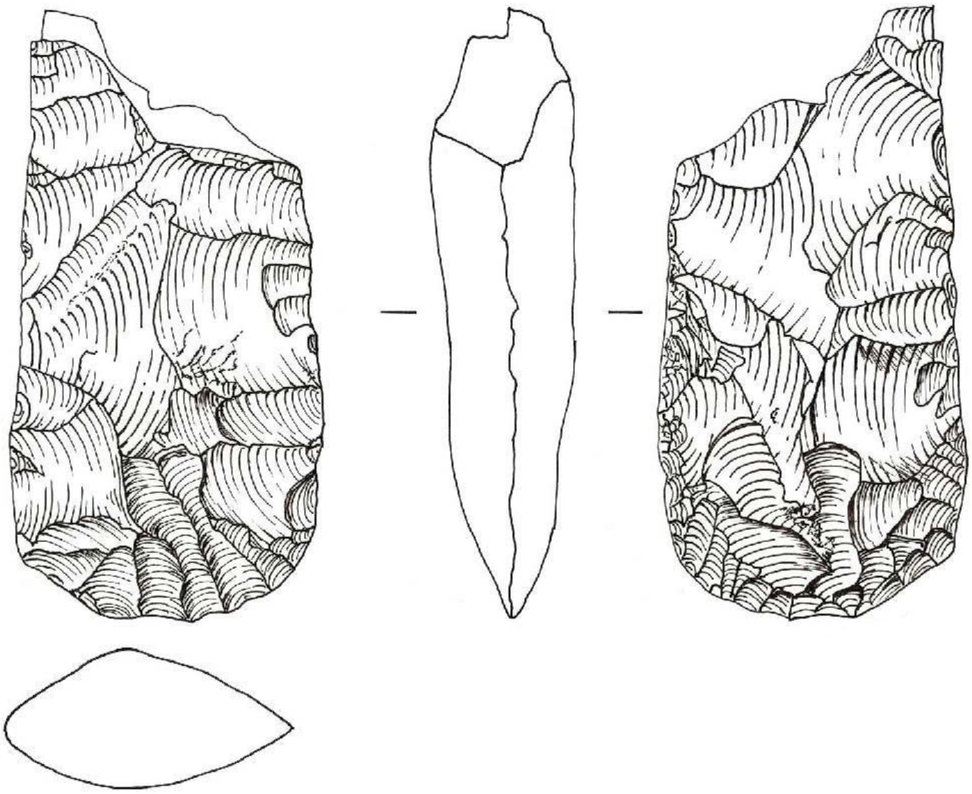
The following all appear to be Early Neolithic.

92. Large flake with semi abrupt retouch, probably a waisted tool.
93. End scraper , and blade fragment.
94. End scraper.
95. Miscellaneous retouch– probably a scraper.
96. Flake, may have been utilised.

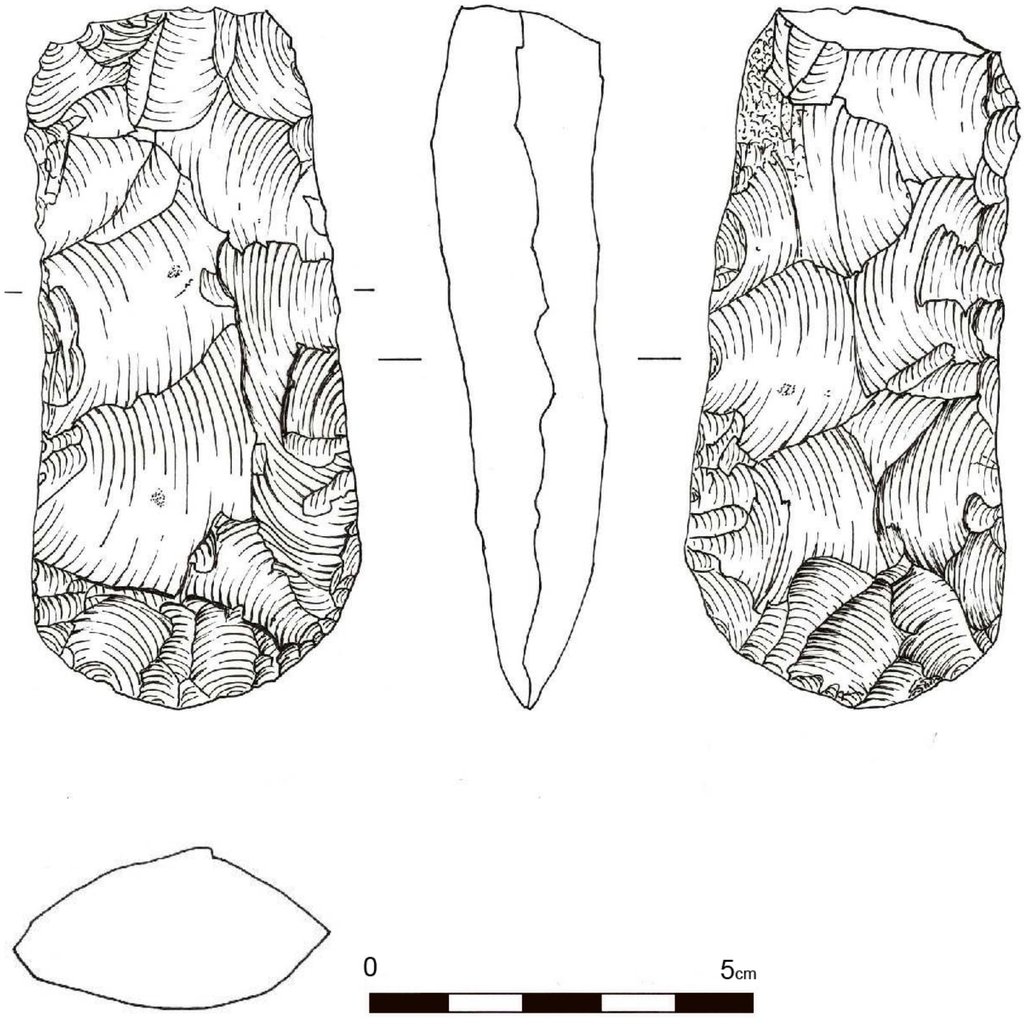
Single platform core.

Axe fragment, butt end, lenticular thin-butted.

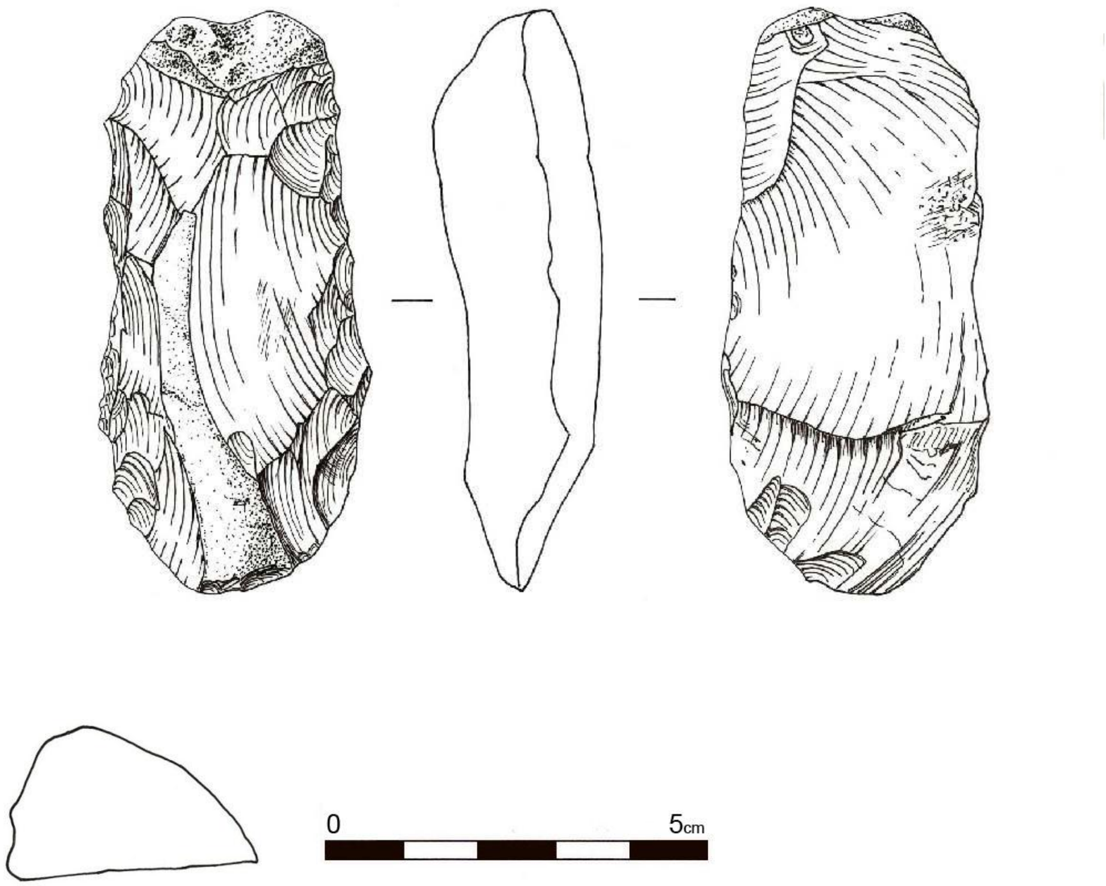
THE NEOLITHIC AXES



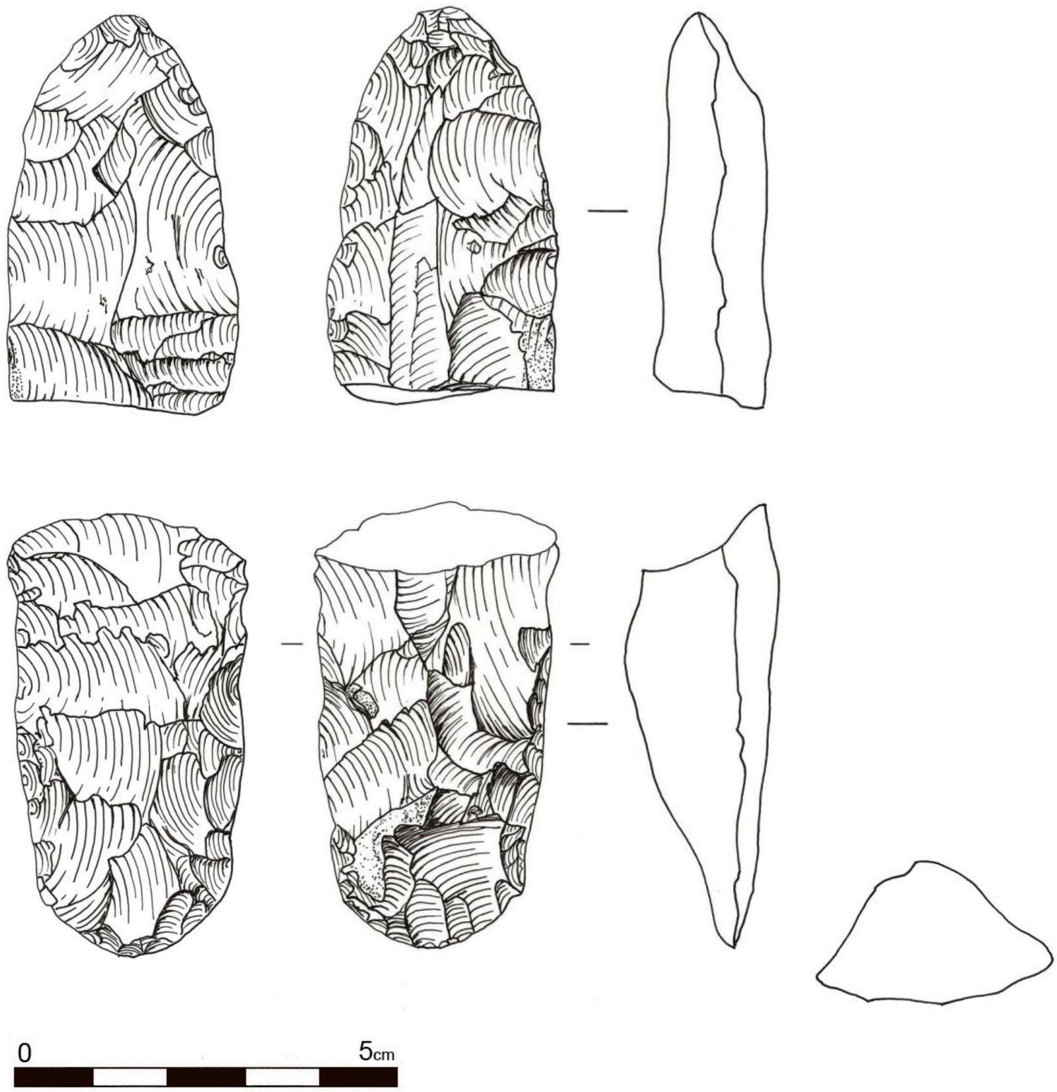
Flaked axe fragment, lenticular thin-butted type. Soft hammer struck with evidence of utilisation. Probably broken in use as there is a fault with inclusions in the break, but also with a later break which is not as patinated as the rest of the exterior surface. Butt end missing. Lustreless, white to light grey patination. Weight 58g.



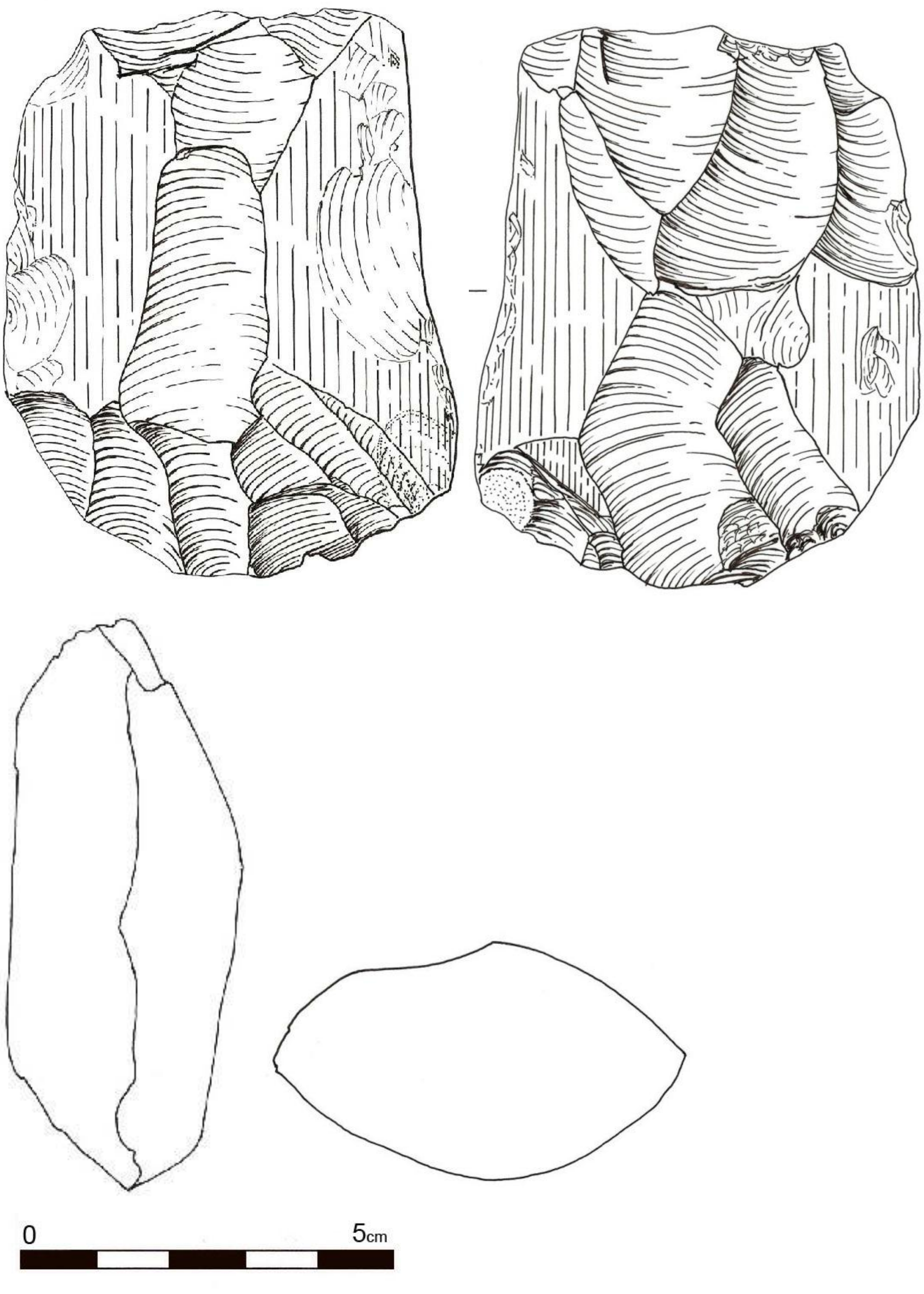
Flaked axe fragment, lenticular thin-butted type. Soft hammer struck with evidence of utilisation. Crushed area to lateral edges due to abrasion caused in use by hafting, near missing butt end. Lustreless, white to light grey patination. Weight 99g.



Flaked axe utilising a wide flake. Type E, D-shaped. Cutting edge broken, re-sharpened and re-used. Crushing and polishing to lateral edges, with a sheen from the butt-end to the middle, probably due to abrasion from hafting. Opaque light grey patination. Weight 56g.



Two flaked axe fragments, thin-butted becoming more D-shape towards the cutting end. The patination of both is the same opaque blue and both probably belong to the same axe. Evidence of crushing and polishing to the lateral edges probably due to abrasion from hafting. Weight, butt-end 26g, cutting end 31g.



Polished axe fragment, thick-butted, Type A. Remains of deep flake scars which have not been obscured by subsequent polishing. Broken, re-flaked, probably re-hafted and with evidence of use-damage. Opaque off white patination. Weight 166g.

AN ASSESSMENT OF BULK SAMPLES AND SEEDS FROM BLACK PATCH, EAST SUSSEX

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Introduction

A combination of bulk samples and hand collected samples have been taken during the excavation of a possible hut platform (or activity area used after the hut was abandoned?) at Black Patch, East Sussex. The majority of the hand collected samples were taken from context (2100) spits 6 and 7 although a few were also taken from equivalent deposits (161) and (223), and from pit fill context (2126). The flots are derived from samples from context (223), the hut/activity area. These samples were taken to aid the recovery of archaeobotanical remains for the purposes of radiocarbon dating and to obtain information about the economy and agriculture of the site.

Due to the site location on top of the South Downs and the relatively good soil drainage only charred remains will be considered in this assessment. Anoxic, waterlogged or desiccated conditions suitable for preserving uncharred plant remains are not present at Black Patch and therefore any uncharred botanicals must be considered modern, intrusive elements.

Methods

Bulk samples 1-17 taken from the hut floor excavation were floated by Sussex Univ/the excavation team. Each sample has produced a coarse (C/S) and fine (F/S) fraction retained on grade sieves during bucket/tank flotation. Once at Archaeology South-East the flots were weighed and scanned by the author to obtain an indication of their contents and to establish their potential for further work. Where necessary the flots were sieved to remove the larger (often uncharred fraction) which facilitated viewing the smaller archaeobotanical components. The hand collected samples were treated in much the same way although for these it was necessary to remove the now dry sediment component that had been collected with the charred botanicals. Plant remains have been identified by comparing the archaeological remains with modern reference specimens held at the Institute for Archaeology, University College London, and reference texts (Cappers et al. 2006). Nomenclature used follows Stace (2005).

Results

The results of this assessment are given in table --. In several instances samples contain no discernable charred archaeobotanical remains and these have been grouped at the end of the table. The remaining samples have been grouped by context. Wood charcoal (see charcoal report) and occasional charred macrobotanical remains, including cereal grains (wheat and barley), weed seeds, stem and chaff fragments have been retrieved from the samples. None of these were present in the large quantities recorded by Hinton (1982), in the assemblages from the Drewett (1982) excavation, however of the taxa discussed in that report, several are also present here.

Hand Collected Samples

Samples from context (215) a dark earth layer thought to be equivalent to contexts (223) and (161) produced one charcoal fragment in quadrant 11q and several indeterminate plant fragments in two small samples taken from quadrant 11r. Unfortunately the remaining samples from (215) and those from (223) and (161) contained modern uncharred plant remains only and are therefore not considered further.

Context (2100) the top soil layer present across the whole of Trench 1 produced occasional cereal caryopses (grains). Taxa identified include *Triticum spelta* L. (spelt wheat), *Triticum* cf. *dicoccum* SCHÜBL. (emmer wheat), a grain that has similarities with *Triticum monococcum* (einkorn wheat) and several possible *Triticum* cf. *aestivum* L. (bread wheat) grains. One of the spelt wheat grains from quadrant 24Y retains part of the lemma and palea in which it would have been tightly enclosed. Grains identified as *Triticum* cf. *dicoccum* (emmer wheat) were present in quadrants 39E, 39X, 409E, 40G and 40H. *Hordeum* sp. (barley) grains were present in eight samples, from spits 7 and 8, in quadrants 34J, 17O, 36B, 36F, 36V, 374Q, 39C and 40G. Angular morphologies are evident on the well preserved barley grains from three of these quadrants (36B, 39C and 40G) which indicate they were hulled. The other grains are less well preserved and features typical of hulled barley cannot be distinguished. A single rachis fragment was also noted in 39C and of the limited material present it displays similarities with barley. Two further stem fragments, attributed to Cerealia but otherwise unidentifiable, were found in quandrants 36C and 40U. The node and internode fragment from 40U is moderately large, measuring 6-7mm in diameter.

Wild plants were scarce in samples from context (2100). Several quadrants contained charred plant remains (table --) but these are too poorly preserved for identification and are therefore classed as indeterminate. Charcoal fragments have also been noted in quadrants 36P, 36V, 38C and 40R. Of these one fragment is vitrified and the fragment from 38C may be root wood.

A single sample taken from Context (2101), a topsoil layer below (2100) produced charcoal fragments only.

Samples from pit fill context (2126) and the fill of a posthole (2160) within a double posthole feature both contained cereal grain fragments. The majority were too poorly preserved and fragmented for identification however a single grain from (2160) has been identified as *Triticum* cf. *dicoccum* (emmer).

Bulk Samples

The floated bulk samples have produced markedly different assemblages of charred plant remains to the hand collected samples. It is immediately noticeable that cereal caryopses are almost absent. Only two samples, F/S 6 and F/S 13, contained single *Hordeum* sp. and *Avena*/*Bromus* sp. seeds respectively. Several samples contained charcoal fragments (table --). Fragments >4mm from sample F/S 5 have been identified as *Quercus* sp. (deciduous oak), a commonly identified taxon in the charcoal assemblage (see charcoal report).

Plantago lanceolata L. (ribwort plantain) seeds were identified in two samples, F/S 3 and F/S 15. Both also contained charred grass stem fragments. Sample C/S 6 contained half a *Vicia*/*Lathyrus* sp. (tare/vetch) while sample F/S 7 produced a single *Polygonum/Rumex* (knotgrass/dock).

F/S 4 contained significantly larger quantities of charred plant remains. A few of these were very small seeds that may be identifiable if the flot is fully analysed and the seeds are separated from the charcoal fraction. At present awn fragments and stem and node fragments have been noted but it is unclear whether they are from crop cereals or wild grasses. In sample F/S 6 a charred fruit similar to *Fumaria* sp. (fumitory) has been recorded.

Uncharred *Rumex* cf. *obtusifolius* L. fruits, (some with perianth) were common components of samples C/S11, F/S11, C/S12, F/S12, C/S13, F/S14, C/S15, F/S16 and F/S17. Sample F/S12 also produced several uncharred *Prunus* sp. with what appears to be rodent damage or gnaw marks preserved. These uncharred seeds were most likely introduced to the deposits relatively recently, perhaps in animal burrows. While these are clearly modern and their presence would not normally be discussed, the presence of these intrusive components in relatively large quantities do indicate some disturbance and therefore any archaeobotanical remains and indeed archaeological remains in these areas should be viewed with caution.

Discussion and Conclusions

Sampling during this phase of excavation at Black Patch has revealed the presence of a small assemblage of charred botanical remains. The charred seeds, fruits and chaff that were recorded are in varying states of preservation; from highly fragmented to intact with adhering chaff. The range of taxa and the quantities of taxa present are limited and therefore interpretations of the economy and palaeovegetation of the area are also constrained.

Cultivated Plants

The cereal taxa identified broadly coincides with taxa recorded by Hinton (1982) although *Triticum aestivum* was also recorded in this assemblage but not by Hinton

(1982). Considering the small numbers of seeds, a wide range of wheat taxa have been noted. Although at first glance this suggests a wide array of crops were being brought to the site and possibly farmed in the area, caution should be taken in interpreting this small assemblage. The assemblage may have accumulated over a considerable length of time. Identifications made here are based on the seeds alone and are therefore given as possible identifications. Ideally glume bases or rachis fragments should be used to identify cereals or in their absence it is preferable to have large assemblages which are more likely to reveal the range of cereal grain morphologies than occasional grains scattered across the site. Unfortunately large assemblages are relatively rare at sites such as Black Patch and preservation of even the small quantities noted here is remarkable.

Cereal grains at this site do not appear to be located within specific features and are not directly associated with burning/charring episodes. Instead they were found distributed across the deposits and the assemblage is likely to represent a background scatter of activity in which crops were used across the site. They may derive from several, perhaps accidental incidences in which they became charred.

Weeds/Wild Plants

Weed/wild plants were recovered from bulk soil samples rather than hand collected samples. In these samples some charred plant remains likely to have grown as weeds on agricultural land are evident. These include ribwort plantain, vetch/tare, fumitory, knotgrass/dock and the grass stem fragments. These can currently be found on chalk downland in SE Britain. All of these plants may have occurred in the site vicinity on arable land and may have been brought to the occupation area unintentionally with crops. Grass seeds, *Hordeum* sp. and *Avena/Bromus* sp., present in F/S 6 and F/S 13 may or may not be cultivated varieties and if wild may also have occurred as crop weeds. Unfortunately as the number and variety of weed seeds are very low, the assemblage cannot be used to determine past environmental conditions to any great extent. Taxa present coincide with those recovered by Hinton (1982). With the broader range of taxa present in the Drewett samples Hinton (1982) was able to conclude that they are components of 'light, calcareous soils' and the current assemblage certainly doesn't contradict this.

Further Work and Radiocarbon Dating

A single sample F/S 4 is considered to hold some potential for further work. It should be possible, through reference to modern specimens at UCL, to obtain some identifications on the weed seeds and some of the chaff elements. If the context from which this sample originated is considered suitable for further analysis the flot should be sieved and fully sorted to separate the charred plant remains from the charcoal fraction. This sample may provide some further evidence regarding the crops processed at the site however as a single sample the information obtained is likely to be limited. It may however be comparable to the assemblages discussed by Hinton (1982).

to obtain sufficient material for AMS dating it may be necessary to combine seeds from some grid quadrants belonging to the same context. The cereals from this assemblage provide the best potential for dating because they are more frequent that the wild plant remains. The majority of these originate from top soil contexts that are likely to have some modern disturbance and potential movement of botanical remains. Cereals within features, such as the pit (2126) and post hole (2160), are more likely to reveal dates associated with the use of this site than cereals from topsoil layer (2100). Cereals in context (2126) may provide just enough carbon for AMS dating for which a minimum of 50mg of carbon (for charred plant remains) are required.

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BLACK PATCH CHARCOAL ANALYSIS

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Introduction

The charcoal assemblage from the Black Patch 2005/06/07 excavations predominantly consists of small fragments dispersed across the hut floors and within posthole features. A small assemblage was also collected from excavation areas in the valley bottom.

Charcoal from an earlier phase of excavation had revealed a low diversity of taxa (including oak, hazel, hawthorn and gorse) that were most likely brought to the site for fuel and for construction purposes or artefact manufacture (Cartwright, 1982).

This assessment aims to establish whether any of the charcoal sampled during the most recent excavations at the site is suitable for radiocarbon dating. It also aims to determine whether the limited number of taxa present in the samples from the 1978 excavations is replicated in these occupation deposits or whether this was a localised occurrence. The analysis will characterise the vegetation in the site vicinity whilst also establishing evidence for wood collecting strategies employed by the site occupants.

Methods

Charcoal specimens were hand collected with minimum disturbance or cleaning to reduce the potential for contamination. Charcoal fragments were also extracted from several bulk samples (that had been bucket? floated).

Charcoal fragments were fractured to obtain three sections and these were analysed under an Olympus reflected light microscope at magnifications of x50, 100, 200 and 400. The condition of preservation and taxonomic features were recorded. Taxonomic identifications have been made by comparing the archaeological specimens with modern reference specimens at the Institute for Archaeology, University College London and in reference atlases (Hather 2000, Schweingruber 1990, and Schoch *et al*. 2000). Nomenclature used follows Stace (2005).

Results

Preservation within this assemblage is highly variable and many pieces were too small to obtain the three anatomical surfaces necessary for identification. Identifications were obtained for well preserved specimens, and contexts with greater quantities of charcoal and/or larger specimens. Identifications have been made to genus or species where possible. It should be noted however that within certain families the wood anatomy of different species is very similar and cannot be satisfactorily differentiated based on anatomical characteristics alone. In such instances it is necessary to take into consideration their natural distributions within Britain and Europe to refine the identifications.

A total of 456 fragments were identified and Table 1 details these identifications by context and excavation grid number. The charcoal assemblage is dominated by fragments of *Quercus* sp. (deciduous oak). Oak is particularly common in contexts [2294] grid 147F, [2276] grid 18Q, [2106] grids 20I and 20L and contexts [2254] and [2246] within grid 49V.

Leguminosae specimens (cf. *Ulex* sp. - gorse) are prominent across the deposits while the remaining taxa comprise single specimens of *Rhamnus* sp. (buckthorn), *Ilex aquifolium* L. (holly), Rosaceae (cf. *Rosa* sp. – roses) and Maloideae group specimens. The Maloideae group includes hawthorn, whitebeam, apple and pear which cannot be separated using their anatomy.

Discussion

Preservation

Many of the oak fragments display well preserved anatomy but have split into thin pieces radially. This is fairly typical of oak due to the combination of large multiseriate and small uniseriate rays. In addition several contexts are dominated by charcoal fragments that are very brittle but have a sponge like appearance (similar in appearance to cinder-toffee). This preservation state has resulted in distorted wood anatomy making identification very difficult. Occasionally patches of clear anatomy are preserved within the specimens, such as in specimens from context [2254], grid

49V and in each instance these clear patches reveal that the specimens are oak. One piece from sample <246>, also taken from context [2254] 49V, has well preserved anatomical features of oak on one half that gradually grade into ‘spongy/distorted’ characteristics. This lends further support for grouping all these specimens under ?*Quercus* sp. although it is possible that other taxa have been unknowingly included.

Several uncharred and partially charred specimens of gorse were present in context [2145], grid 262I and in a sample <14> from the BP Valley Bottom excavation. For uncharred material to preserve, desiccated, anaerobic or waterlogged conditions such as in cess deposits or low-lying deposits below or close to the water-table are required. Black Patch is located in the top of the South Downs and does not provide such conditions. It must therefore be assumed that these pieces are relatively modern and have been introduced through ploughing activities or intrusive animal burrows. This part charring was only noted on gorse specimens and it is suggested that recent burning activities to clear land produced these fragments. The presence of these specimens also suggests some modern disturbances within the soils whether through ploughing or bioturbation and this should be taken into account when interpreting other finds from these and any overlying contexts.

The remaining identified taxa were present in such small quantities it is difficult to assess their preservation state however no unusual characteristics such as the spongy/distorted oak were noted.

Past Vegetation, Wood Collecting Strategies and Wood Use

The low diversity of taxa in the assemblage limits the characterisation of the past vegetation however all of these taxa could have occurred near the site either on the top of the South Downs or close-by in scrub and wooded areas on the slopes to the north and south of the site. As Cartwright (1982) discussed these trees could all have been used for firewood as well as for various construction purposes. Many of the specimens from this assemblage were associated with hut platforms and may have been used for hut construction. Oak would have provided an ideal resource for durable support posts while the more flexible, smaller branches may have been used for roofing. The hedgerow taxa (Maloideae specimens and buckthorn) as well as smaller taxa such as gorse may have been used for kindling. The taxa present suggest that the vegetation was similar to the native vegetation found in the area today. Unlike the 1978 excavations no *Corylus avellana* (hazel) specimens were recorded. This may be attributed to wood selection differing slightly between the sites although it could equally be a result of preservation bias.

This assemblage and the previous work undertaken on the adjacent site indicate that oak may have been favoured for both construction and fuel purposes. Due to anthropogenic influences inherent to charcoal assemblages and unpredictable fragmentation it is not possible to conclude that oak was dominant within the local vegetation however it certainly appears to have been a prominent and highly valuable local resource that was used repeatedly. The 'spongy/distorted' oak assemblage may represent wood that has decomposed prior to charring and it may be useful to develop this discussion further by relating their occurrences to the types of feature excavated (whether pits, postholes, or occupation horizons for example). Prior to publication a literature search will should also be undertaken to establish whether similar preservation traits have been observed in other charcoal assemblages.

Potential for Further Work

The assemblage is dominated by oak wood and contains a limited range of taxa and therefore holds limited potential for further work. It is recommended that a little further work is undertaken to draw together the context information and the charcoal data to establish whether certain taxa and in particular the 'spongy/distorted' taxa are distributed in specific locations within the site.

A main aim of this analysis was to identify taxa suitable for radiocarbon dating but again the dominance of oak, that is normally considered unsuitable for dating, has hampered this aspect of work. Unfortunately contexts flagged as important for dating (see ** contexts in Table 1) produced oak wood and unidentified or indeterminate wood fragments only and are thus unsuitable for further work. Several other contexts do contain small amounts of material that could be dated using Accelerated Mass Spectrometry (AMS). A small twig fragment was recovered from context [2100], grid 39X spit 7 and although it has not been possible to identify this piece because the wood anatomy is not mature it could be submitted for AMS dating. The

Maloideae specimen from context [2163], grid 258K, several Leguminoseae (cf. *Ulex* sp. gorse) and the buckthorn specimen from context [2235], 262c are also considered suitable for dating. It should be noted that careful selection (especially of the Leguminaseae) is required to ensure that partially charred fragments and contexts containing such specimens are excluded. The value of dating these contexts should now be considered.

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Report on the Teeth from Black Patch

Site:	Black Patch, Alciston, East Sussex
Excavation:	2005 and 2006 by Richard Tapper, University of Sussex
Report by:	Sarah Green

The loose teeth recovered from Black Patch were examined and identified using a comparative collection and standard references such as Schmid (1972), Hillson (2003) and Hillson (2005). The data was recorded on a computer spreadsheet (Excel) allowing details of context, species, tooth, side, completeness, measurements, alteration and condition to be recorded for each fragment.

Overall, the teeth were in a fairly poor state of preservation with much of the surface enamel being eroded in all cases. Identification, therefore, has to be viewed as cautious, as does the side from which the tooth came. Only a few measurements were able to be taken with any degree of accuracy, due to the broken state of most of the teeth, but they have been included in the spreadsheet where taken.

Apart from the teeth, there were two unidentified fragments of bone and one further fragment, possibly from the shaft of a long bone. There was also a small piece of worked bone, possibly part of a bone pin or similar item.

A total of 13 loose teeth were identified, with 4 being assigned as sheep, 7 as cattle, and 2 fragments of molar pillars, possibly from cattle based on their size. With the exception of the two fragments, the remaining 11 teeth are discussed briefly below.

Sheep

The four sheep teeth consisted of one upper molar (M1, M2 or M3[1]), one lower molar (M1 or M2) and two lower third molars (M3). Of the two lower third molars, one was incomplete with only the two distal cusps present, but it appeared to have had little surface wear. The other lower third molar, although very eroded on all surfaces, appeared to be in a state of either unerupted or just erupting, but not yet in wear, at time of death.

Cattle

The seven cattle teeth consisted of two lower molars (M1 or M2), one upper molar (M1, M2 or M3), one upper pre-molar (possibly P4), plus the three teeth which had been found in a pit (site reference BP05/1117) and apparently "carefully placed on a large flat piece of flint" (Tapper 2006). These are identified as probably being the upper molars M1, M2 and M3 from the same individual and possibly from the left side. Based on their state of wear and root formation, it is most likely that the largest molar was a fully erupted (but unworn) M1, with M2 still erupting and M3 unerupted in the crypt of the bone, at the time of death. Due to the state of preservation, however, and without the rest of the maxilla this cannot be confirmed. From the excavation photograph of the teeth in-situ, it appears that the lingual surface was uppermost which would indicate that the skull had been placed (or fallen) on its side in the pit, and that one half of the skull was subsequently lost either through erosion or ploughing. A photograph is attached showing the three teeth (from Black Patch), with the largest molar (?M1) additionally shown against an upper molar cattle tooth from another site for comparison (photograph 1). A further comparative photograph is also attached, from an excavation in Oxfordshire (CBA Research Report 28) which gives one possible indication of how the skull may have originally been placed (photograph 2).

As with sheep, the cattle teeth all showed little signs of wear and the roots (when surviving) were open, indicating that the teeth had still been growing (or were unerupted) at the time of death.

[1] in sheep and cattle, differentiation between all three upper molars, and the first two lower molars is problematic if the teeth are found separated from the mandible/maxilla

Age at death

Age and sex ratios in an animal population can help to determine the economy being, practised. Davis (1987: 158) says of sheep and goat mandibles that a "predominance of juveniles may signify a meat economy. An abundance of older animals, greater than say five years of age, may indicate an economy emphasizing secondary products like milk and wool (besides meat)." However, with so few bones or teeth recovered at Black Patch it is, unfortunately not possible to make such estimates. The following details on tooth eruption are, therefore, given for background information only.

Payne (1973: 293) has suggested a number of stages when teeth come into wear in sheep and goat mandibles. On his analysis, M1 is in wear with M2 unworn between the age of 6 and 12 months, and M2 is in wear with M3 unworn between 1 to 2 years of age. On that basis, if the lower M3 sheep teeth that were found were either still erupting or just erupted but with no wear, then a possible age at death could have been between 1 to 2 years. On the assumption that the lambs were born in the spring, then an age at death of between 18 and 20 months would suggest an autumn killing.

An analysis of age classes for cattle mandibles was proposed by Halstead (1985: 219), which may be broadly applied to upper teeth. At age between 8 and 18 months, M1 is in wear with M2 erupting/erupted but unworn. At age between 18 to 30 months, M2 is in wear with M3 unworn. On that basis, the 'skull' in which all three upper molars were formed or forming (but unerupted) could have been from an animal aged between 8 and 18 months at time of death, assuming that M3 was still in the crypt.

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Photograph 1. **Teeth**

recovered from Black Patch,

2005 Reference BP05/1117

3 x upper molars from Black Patch (which were found placed on a large, flat piece of flint

The largest upper molar from Black Patch compared with an upper molar from Barcombe Roman Villa *[lingual side]*

The largest upper molar from Black Patch compared with an upper molar from Barcombe Roman Villa *[buccal side]*

Photograph 2. Comparative photograph giving one possible indication of how the 'skull' containing the 3 upper molars (site ref BP05/1117) may have been placed

The excavation of an Iron Age settlement, Bronze Age ring-ditches and Roman features at Ashville Trading Estate,
Abingdon (Oxfordshire) 1974-76
Michael Parrington
CBA Research Report No 28 (1978)

VI Pit 71 under excavation showing cattle skull, scale 15cm [Ph.: M. Parrington]